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Classification of Solar Prominences for Sunspot Cycle No. 19 - 1957

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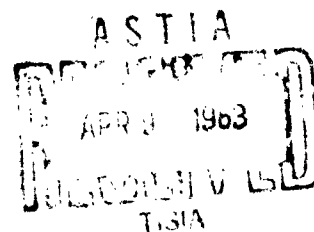
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Cambridge 38, Massachusetts

Contract No. AF19(604)-4962
Project No. 7649
Task No. 76490

SCIENTIFIC REPORT NO. 17

January, 1963



Prepared for

GEOPHYSICS RESEARCH DIRECTORATE
AIR FORCE CAMBRIDGE RESEARCH LABORATORIES
OFFICE OF AEROSPACE RESEARCH
UNITED STATES AIR FORCE
BEDFORD, MASSACHUSETTS

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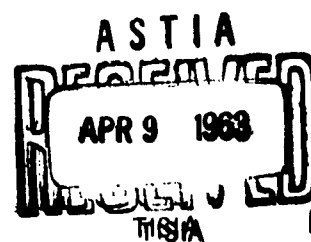
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TABLE OF CONTENTS

Abstract-----	1
Introduction -----	2
Table I -----	3
Table II -----	47
Comparison of Classes from Surveys and Films ---	49
Table III -----	50
Analysis -----	51
Table IV -----	52
Table V -----	54

CLASSIFICATION OF SOLAR PROMINENCES FOR
SUNSPOT CYCLE No. 19 - 1957

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ABSTRACT

The positions, areas, and behavior classifications of all prominences observed at the Sacramento Peak Observatory, Sunspot, New Mexico, during 1957 are tabulated and their distribution with solar latitude is analyzed.

Similar studies for the years 1955 and 1956 have appeared under this contract as Scientific Reports No. 13 and No. 16, respectively. A summary report for the analysis of the preceding cycle was issued as Scientific Report No. 12, "Classification of Solar Prominences - XII - Summary for 1944 to 1954."

The research reported in this paper has been sponsored by the Geophysics Research Directorate of the Air Force Cambridge Research Laboratories, Office of Aerospace Research, under contract AF19(604)-4962.

INTRODUCTION

The observations used in this research consist of the complete set of prominence surveys made at the Sacramento Peak Observatory, Sunspot, New Mexico, during 1957, and motion picture films of prominences made on 41 days during the same year at the same observatory. We are grateful to Dr. John W. Evans, for supplying us with the original survey films.

Table I contains the measures of position and area, the intensity estimates, and the classification according to the Menzel and Evans scheme (1953) with the addition of the classes ASa (coronal rain in spot areas) and ANe (suspended clouds not associated with sunspots) of all prominences in the surveys.

Column 1 gives the date of the observations. Column 2 indicates the amount of spread, in terms of the position angles marked by the beginning and end of each prominence. A spread of 1° indicates the position only of each of the narrower prominences, some of which are less than 0.5° in width. Column 3 gives the latitude of the center of intensity.

Column 4 indicates the "importance" of the prominence by an assigned letter giving a rough measure of the total intensity, from D- for the most insignificant through A+ for the most impressive prominences. Column 5 records the area of the prominence, expressed in standard prominence units.

Column 6 contains the class. Doubtful classifications are followed by a question mark. Non-spot prominences so adjacent to spot prominences as to suggest association with the spot are noted by asterisks. Column 7 gives additional comments.

Table II gives the classifications for the prominences in the motion picture studies. The columns show date, position angle of the center of the frame, classification, and additional comments.

TABLE I

1957 SACRAMENTO PEAK PROMINENCE SURVEYS

Date	Spread	Lat. of Center of Intensity°	Importance	Area in p.u.	Class	Comments
1957						
Jan. 22	17-27	N61	C+	300	ANd	Poor seeing all day
	53-55	N28	D	60	ANm	
	74-75	N8	D-	10	BNs	
	80-81	N2	D-	20	ANm	Streamer
	88-95	S10	D	100	ANd	
	102-105	S21	D-	40	BSs	
	109-111	S28	D-	20	ANm	
	122-133	S47	C	200	ANd	
	193-207	S63	C	230	ANd	
	220-255	S27	A	3100	ANd	
	270-272	N9	D	40	ANc	
	284-286	N23	D-	30	ANc	
	293-308	N37	B-	550	ANd	
	312-313	N51	D-	10	BNs	
	327-331	N67	D+	140	ANd	
Jan. 24	13-27	N58	C	270	ANd	Poor seeing all day
	36-37	N44	D-	10	BNs	
	48-54	N30	D	70	ANd	
	60-71	N17	D+	135	BSs	
	61-69	N17	D	115	ASa	
	78-81	N1	D-	30	BSs	
	85-86	S4	D-	10	BNs	
	94-107	S21	C	220	ANd	
	108-109	S28	D-	15	BNs	
	120-123	S41	D-	50	ANd	
	128-129	S47	D-	10	BNs	
	145-149	S66	D-	25	ANd	
	159-161	S78	D-	30	ANc?	
	181-183	S78	D-	30	ANm	
	199-206	S59	D-	55	ANd	
	225-238	S29	C+	320	ANd	
	234-237	S23	D	40	ANd	
	252-257	S6	D	80	ANd	
	279-280	N18	D-	10	BNs	
	290-292	N30	D-	15	ANm	
	301-305	N42	D	60	ANd	
	320-321	N59	D-	5	BNs	
	326-330	N67	D	70	ANd	
	336-337	N75	D-	10	BNs	

Date	Spread	Lat. of Center of Intensity°	Imper- tance	Area in p.u.	Class	Comments
1957						
Jan. 29	14-27	N55	C	225	ANd	
	44-45	N35	D-	5	BNs	
	57-72	N14	D-	550	ANd	
	86-94	S9	C+	350	ANc*	
	92-103	S18	C	300	ASa	
	108-110	S30	D	45	ASa	
	110-113	S32	D	40	BSs	
	111-125	S37	C+	340	ASl	
	146-154	S70	D-	70	ANd	
	223-229	S33	D+	110	ANd*	
	224-233	S32	D	100	ASl	
	235-238	S22	D-	20	ASa	
	236-250	S14	C+	325	ANd*	
	266-286	N22	B	650	BSs's	
	288-303	N36	D-	525	ANd	
	317-327	N65	D+	180	ANd	
Jan. 31	19-26	N55	B-	300	ANm	
	53-56	N23	D	50	ANm	
	76-92	S7	B-	600	ANd*	
	96-111	S25	C+	375	ASa	
	141-146	S65	D-	30	ANd	
	199-200	S59	D-	5	BNs	
	204-211	S52	D-	35	ANd	
	220-223	S36	D	40	BSs	
	224-237	S30	C-	160	ANd*	
	241-248	S14	D	40	ANd	
	250-257	S4	D+	170	ANd	
	262-269	N8	C-	290	ASf, f	
	273-282	N17	C-	215	ASf	
	275-284	N20	D-	40	ANd*	
	290-301	N37	C-	180	ANd	
	312-322	N61	C	190	ANd	
Feb. 1	334-10	N84	D-	20	BNs's	
	15-24	N57	B-	375	ANm	
	27-29	N50	D-	30	BNs	
	45-59	N27	C+	340	ANd	
	76-95	S6	C+	350	ANd*	
	94-101	S19	C+	400	ANb*	Streamers
	101-110	S26	C	215	ASa	
	119-121	S42	D-	20	ANm	
	131-136	S55	D	50	ANd	
	193-200	S60	D	80	ANd	
	222-235	S32	C	215	ANd	
	242-248	S23	D-	90	ASa	
	243-249	S12	D	70	ANd*	
	257-266	N3	C-	175	ANd*	
	266-279	N13	C+	475	ASf, f	
	280-284	N24	D+	140	ANd	
	302-321	N61	C+	270	ANd	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments	
1957							
Feb. 7	340-341	N81	D-	10	BNs	Poor seeing all day Streamers Omitted in the Analysis	
	16-21	N58	C-	160	ANm		
	29-43	N38	C	200	ANd		
	54-72	N10	B	950	ANd		
	84-90	S10	D+	160	ASf		
	90-100	S20	C+	290	BSs's?		
	94-107	S22	C-	185	ASa		
	112-121	S41	D+	130	ANd*		
	121-126	S47	D	105	BSs		
	218-221	S37	D	30	ANd*		
	222-229	S32	D	85	BSs		
	224-229	S30	D	90	ASf		
	245-248	S9	D-	30	ANd		
	P.A. 270° and 315° missing						
Feb. 8	13-19	N59	D-	100	ANd	Assended	
	49-59	N20	C	215	ANd		
	57-78	N10	B+	1050	ANd*		
	66-70	N7	D+	160	BSs		
	82-96	S15	C	270	ANe*		
	96-100	S22	C-	165	BSs		
	100-107	S28	D	100	AS1		
	103-129	S40	B-	650	ANd*		
	116-123	S44	D+	160	ASa		
	143-145	S69	D-	50	ANm		
	196-197	S58	D-	10	BNs		
	207-209	S47	D-	15	BNs		
	219-223	S34	D	120	ANd		
	239-244	S13	D	100	ANm		
	280-281	N26	D-	5	BNs		
	295-303	N43	D+	120	ANd		
	319-325	N46	C	195	ANm		
	330-331	N75	D-	5	BNs		
	Feb. 9	339-340	N81	D-	5		BNs
350-355		N80	D	70	ANd		
0-10		N70	D-	25	BNs's		
10-20		N59	C-	170	ANd		
25-38		N43	D-	40	BNs's		
52-63		N28	D+	150	ANd*		
55-72		N3	B+	950	ASf		
72-79		S1	D+	115	BSs's		
85-90		S13	D-	10	BNs's		
92-96		S19	D	80	BSs		
97-101		S25	D	100	BSs		
102-108		S29	D+	125	ANd*		
102-123		S36	D+	160	ASa		
118-121		S44	D	20	ANm		
126-129		S53	D	40	ANm		
138-150		S67	C	210	ANd		
154-157		S79	D-	10	BNs,s		
214-216		N40	D-	15	ANe		
(cont.)		220-228	N31	D	35	BNs's	

Date	Spread	Lat. of Center of Intensity	Impor- tance	Area in p.u.	Class	Comments
1957						
Feb. 9 (cont.)	236-249	N13	C	240	ANd	
	254-256	O	D-	15	BSs	
	257-262	N5	D-	40	ASa	
	266-270	N13	D-	15	BNs	
	276-288	N27	D+	130	ANd	
	294-298	N42	D	90	ANd	
	303-305	N49	D-	10	BNs,s	
	309-315	N56	D	50	ANd	
	319-323	N66	C	185	ANm?	
	324-329	N70	D-	15	BNs,s	
Feb. 11	12-18	N58	D+	125	ANd	
	37-41	N34	D	90	ANm	
	47-58	N22	D	160	ASa	
	59-68	N11	B-	450	ASf	
	60-70	N10	D	85	BSs,s	
	71-78	O	C	225	ANd*	
	98-112	S28	C+	265	ANd	
	100-102	S57	D-	40	ASf	
	112-123	S41	C+	450	ANd*	Streamers
	126-127	S52	D-	25	ASf	
	130-147	S62	D+	180	ANd*	
	193-200	S 7	D-	65	ANd	
	204-206	S49	D-	15	ANm	
	235-240	S15	D	70	BSs	
	242-255	S7	C	300	ANd*	Streamers
	261-263	N8	D-	40	ANc	
	269-273	N17	D-	45	ASl	
	278-281	N26	D	70	BSs?	
	301-325	N59	C+	700	ASa	From high in the corona
Feb. 12	336-345	N82	D-	15	BNs's	
	9-17	N60	D	90	ANd	
	29-33	N43	D-	35	BNs,s	
	36-54	N33	C	240	ANd*	
	56-57	N17	D-	25	BSs	
	56-69	N10	C+	375	ASl	
	62-68	N10	C+	300	ASf	Funnel superimposed on loops
	71-78	S3	D	80	ANm	
	82-90	S12	D-	40	BNs's	
	98-99	S25	D-	40	BSs	
	99-113	S31	C	240	ANd*	
	113-119	S41	D+	165	ANm	
	132-144	S65	D	90	ANd	
	145-160	S76	D-	40	BNs's	
	193-202	S57	C-	170	ANd	
	229-231	S24	D-	30	ASa	
	234-239	S17	D-	20	BSs	
	242-250	S7	C	280	ANd*	Streamers
	269-270	N16	D-	5	BNs	
(cont.)	277-280	N25	D	65	BSs	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
Feb. 12 (cont.)	281-282	N28	D-	10	BNs	
	303-307	N52	D-	20	ANa	
	319-320	N66	D-	5	BNs	
	331-337	N78	D-	10	BNs's	
Feb. 13	6-7	N67	D-	10	BNs	
	12-19	N59	D-	40	ANd	
	33-41	N38	D	90	ANe	
	36-52	N31	B-	400	ANd*	
	52-70	N12	C-	170	BSs's	
	56-59	N15	D-	40	ASl	
	60-65	N11	C	200	ASf	
	64-82	S1	B-	550	ASl	
	72-78	S3	D+	110	ANd*	
	86-87	S14	D-	15	BNs	
	98-110	S30	C+	275	ANd	
	118-146	S56	C+	300	ANd	
	188-200	S59	C	225	ANd	
	225-229	S27	D-	30	ANm	
	235-241	S16	D	95	ASa	
	237-238	S16	D-	15	BSs	
	239-258	S8	C	235	ANd*	Streamer
	267-268	N14	D-	5	BNs	
	275-276	N23	D-	5	BNs	
	317-319	N65	D	30	ANc	
	Feb. 14	338-24	N72	D	75	BNs's
27-44		N35	B-	450	ASf	
29-35		N41	D	45	ANm*	
37-45		N33	D+	150	ASl	
50-52		N22	D-	20	ASa	
50-59		N19	D	125	ANd*	
64-75		N2	C+	375	ANd	Active
79-89		S9	D-	60	ANd	
93-102		S24	C+	300	ASf	
98-102		S27	D+	100	ANc*	
102-106		S30	D	80	ASl	
111-122		S44	D	30	ANd	
124-149		S57	C	280	ANd	
186-200		S59	C+	375	ANd	
208-209		S44	D-	15	BNs	
215-226		S33	D-	25	BNs's	
235-243		S16	D	70	ASl	
235-239		S16	D+	100	BSs	
239-247		S10	C+	280	ASf	
243-258		S3	C+	325	ANd*	
262-263		N10	D-	10	BNs	
276-284		N26	D+	140	ANd	
287-290		N36	D	45	ANm	
295-307		N47	D-	25	BNs's	
315-319		N64	D	65	ANd	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
Feb. 24	6-13	N61	D	100	ANd	Streamer
	26-32	N40	D+	150	ANd	
	49-54	N18	D	40	ANa	
	64-72	N2	D	95	ANd	
	74-99	S12	B	550	ANd	
	109-114	S41	D	70	ANd	
	125-126	S55	D-	10	BNs	
	136-147	S70	D-	40	ANd	
	166-167	S80	D-	20	BNs	
	180-194	S65	C+	325	ANd	
	204-215	S31	D+	150	ANd	
	220-222	S29	D-	30	ASa	
	223-230	S24	D	70	ANd	
	248-254	N2	C-	160	ASa	
	256-261	N8	C-	185	BSs,s	
	260-265	N12	C-	115	ANd*	
	277-284	N33	D+	100	ANc	
	301-303	N52	D-	20	ANc	
	315-328	N70	D	120	ANd	
Feb. 25	6-13	N61	D+	125	ANd	Streamers
	25-32	N41	C	200	ANd	
	62-63	N7	D	20	BNs	
	78-97	S15	B-	400	ANd*	
	79-86	S11	C+	350	ASf	
	84-95	S16	C-	200	ASl	
	96-98	S27	D	40	ASa	
	98-100	S29	D	30	BSs	
	100-115	S36	C	250	ANd*	
	140-142	S71	D-	25	ANc	
	161-173	S80	D-	25	BNs's	
	164-194	S68	B	525	ANd	
	201-204	S48	D	35	?	
	211-228	S31	C	200	ANd	
	229-235	S18	D+	85	ASa?	
	253-263	N5	C-	170	ANm*	Streamer
	261-263	N12	D	20	BSs	
	270-275	N22	D-	35	ANd	Streamer
	294-297	N45	D-	55	BSa?	
	308-321	N62	C+	275	ANd	
Feb. 26	356-357	N72	D-	10	BNs	
	4-16	N60	D+	150	ANd	
	22-28	N44	C-	140	ANd	
	29-39	N36	D-	10	BNs's	
	5-17	N58	D	100	ANd	
	73-92	S8	B-	500	ASf	
	80-91	S15	D	80	BSs	
	85-87	S17	D	75	ASl	
	100-103	S33	D-	45	ANm	
	111-112	S42	D-	20	ANm	
(cont.)	126-136	S61	D-	20	BNs's	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
Feb. 26 (cont.)	160-161	S83	D-	5	BNs	Arch
	169-181	S73	D	90	ANd	
	197-221	S39	B	750	ANd*	
	226-239	S19	D	65	BSs's	
	232-239	S15	D	50	ASa	
	247-252	N1	D-	95	ANc?	
	251-264	N8	C	235	ANd	
	271-272	N22	D-	10	BNs	
	280-286	N34	D	85	ANd	
	289-294	N43	D	90	ANd	
	301-314	N55	C	270	ANd	Streamer
	315-317	N67	D-	15	ANc	
Feb. 27	357-358	N71	D-	15	BNs	or ASf? Arch
	2-16	N60	C	275	ANd	
	21-27	N46	D	90	ANd	
	56-58	N12	D-	30	ANc	
	72-86	S7	C+	425	ANc*	
	82-87	S16	D-	55	BSs	
	84-94	S19	D	140	ANd*	
	88-92	S21	D-	40	ASa	
	97-104	S32	D	60	ANd	
	140-147	S73	D-	10	BNs's	
	194-201	S51	C	260	ANc?	
	202-217	S45	B	775	ANd	
	230-246	S14	D+	140	BSs,s	
	232-243	S11	D-	40	ASa	
	246-251	0	D	90	ASf	
	252-259	N5	C+	360	ANd*	
	259-263	N12	C-	145	BSs	
	264-275	N21	D-	80	ANd	
	284-290	N38	D+	120	ANc	Streamers
	287-314	N52	B-	450	ANc	
	290-297	N45	D-	30	ANd	
	310-311	N63	D-	15	BNs's	
Feb. 28	337-352	N81	D-	30	BNs's	Streamer
	357-8	N68	D	75	ANd	
	9-21	N56	D+	140	ANd	
	34-36	N34	D	70	ANc	
	41-45	N26	D	90	ASa	
	45-51	N22	D+	120	ASf	
	55-63	N10	D+	125	ANd	
	70-92	S13	B	650	ANd	
	95-100	S28	D	50	ASa	
	124-126	S56	D-	15	ANm	
	131-136	S66	D-	40	ANc	
	142-145	S73	D-	30	BNs	
	185-186	S63	D-	20	BNs	
	200-217	S41	C	210	ANd	
	224-237	S19	C+	300	ANd*	
(cont.)	236-241	S11	D-	40	ASa	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
Feb. 28 (cont.)	237-246	S5	D-	45	BSs,s	
	242-248	S2	D-	50	ASf	
	252-267	N11	C	210	ANd*	
	267-270	N19	D-	25	ASa	
	275-279	N28	D+	90	BSs's	
	276-284	N31	D	110	ASa	
	279-282	N32	D	45	AS1	
	284-294	N37	D+	190	ANe*	
	291-295	N44	D	60	ANd	
	294-309	N50	C	250	ANc	Streamers
	311-322	N67	D-	40	ANd	
	327-337	N80	D-	15	BNs's	
Mar. 16	337-352	N80	D-	70	BNs's	
	357-6	N63	D+	140	ANd	
	12-47	N35	C+	325	ANd	
	57-67	N1	D	90	AS1	
	82-87	S20	D-	50	BSs	
	83-88	S21	D-	20	ASa	
	95-99	S32	D-	15	BNs's	
	110-136	S57	B	750	ANd	
	154-161	S79	D-	15	BNs's	
	178-191	S64	C	245	ANd	
	190-193	S53	D-	10	BNs	
	224-229	S19	D+	135	BSs?	or ANd?
	238-258	N3	B	450	ANd	
	263-277	N25	D-	25	BNs's	
	285-296	N46	D+	200	ANd	
	307-319	N65	C	235	ANd	
	328-334	N81	D	55	ANd	
Mar. 17	1-10	N59	C	215	ANd	
	17-28	N43	C+	350	ANd	
	31-32	N34	D-	10	BNs	
	52-55	N12	D	55	BSs	
	54-56	N10	D-	30	ASa	
	57-67	N3	C+	360	ANc	
	72-73	S7	D-	5	BNs	
	79-86	S17	D	120	ANd	
	89-90	S24	D-	20	BSp	
	91-93	S27	D-	15	ASa	
	112-117	S49	D-	40	ASf?	
	118-135	S62	B	475	ANd	Arch
	174-185	S67	D+	140	ANd	
	190-199	S51	D-	25	BNs's	
	212-213	S32	D-	10	BNs	
	220-227	S23	C-	180	BSs	
	226-234	S15	D-	55	ASa	
	237-240	S9	D	60	ASa	
	239-257	N3	B-	550	ANd	
	261-269	N19	D-	10	BNs,s	
	280-294	N44	D	70	ANd	
	307-316	N64	D+	120	ANd	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
Mar. 18	1-9	N60	D-	125	ANd	
	15-19	N48	D	90	ANd	
	42-44	N22	D	55	ANm	
	43-46	N20	D	20	ASa	
	46-53	N16	D	70	ANd*?	
	55-61	N7	C+	270	ANe*	
	56-65	N4	C-	215	ANc*	
	73-104	S21	D	170	ANd	Poor seeing
	120-125	S58	D+	100	ANc?	
	129-137	S66	D+	130	ANd	
	173-182	S68	D	110	ANd	
	214-223	S27	C+	250	ANd	
	225-231	S18	D	95	ANd*	
	231-236	S12	D-	50	ASa	
	257-264	N16	D-	55	BSs	
	272-281	N30	D	100	ANd	
	288-293	N44	D-	35	ANm	
	307-311	N65	D	85	ANd	
Mar. 21	351-5	N67	D+	130	ANd	
	6-21	N54	C	280	ANd	
	28-36	N34	C-	160	ANd	
	54-62	N7	D	95	BSs's	
	68-72	S5	D-	60	ANc	
	71-75	S7	D-	30	ASf	
	83-90	S21	D-	40	ASl	
	86-97	S27	C-	190	ANd*	
	128-133	S66	D+	135	ANd	
	142-143	S75	D-	10	BNs	
	161-166	S79	D	40	ANd	
	171-176	S71	C	250	ANc?	
	185-192	S54	D	25	BNs's	
	206-221	S34	B+	850	ANd	
	227-229	S17	D	80	ASa	
	254-272	N16	B-	550	ANd	
	291-292	N46	D-	10	BNs	
	297-298	N52	D-	15	ANc	
	310-313	N66	D	40	ANd	
	319-320	N73	D-	15	BNs	
	330-331	N82	D-	10	BNs	
Mar. 25	350-14	N65	D-		BNs's	
	17-29	N41	C	250	ANd	Arch
	49-51	N14	D	40	ANm	
	52-65	N8	D-	70	ANd	
	69-90	S12	B+	1050	ASf	
	81-89	S20	D	80	ANd*	
	92-101	S31	C	190	ANd	
	106-118	S49	C+	525	ASf	
	128-138	S68	D+	100	ANd	
	162-164	S79	D-	20	ANm	
	191-194	S52	D-	10	BNs,s	
	(cont.) 217-219	S26	D-	15	ANm	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
Mar. 25 (cont.)	221-228	S19	D-	40	ASa	
	235-263	N10	C-	350	ASl	
	249-257	N10	D+	150	BSs	
	270-284	N32	B-	375	ANd	
	309-316	N67	D	80	ANd	
	321-326	N78	D-	20	BNs's	
Mar. 26	336-12	N75	D-	30	BNs's	
	356-358	N66	D	40	ANc	
	16-25	N44	C	200	ANd	
	29-51	N26	D-	40	BNs's	
	52-55	N10	D	65	ANc	
	57-70	N2	D-	40	ANd	
	70-89	S11	B	800	ASf	
	73-85	S15	C-	190	BSs's	
	86-92	S24	D+	130	ASa	
	93-96	S30	D+	65	ASf	
	93-97	S31	C-	130	ANm*	
	110-113	S48	D-	30	ANm	
	119-137	S68	C-	195	ANd	
	151-161	S83	D-	30	BNs's	
	172-201	S60	D-	45	BNs's	
	208-223	S31	C+	350	ANd	
	240-263	N7	B-	750	ANd	
	264-269	N23	D-	25	BSs's	
	269-284	N32	B	425	ANd	
	299-314	N67	D	80	ANd	
	316-333	N78	D-	20	BNs's	
Mar. 28	352-20	N58	B	1250	ANd	Streamers
	23-34	N35	C	290	ANd	
	40-47	N20	D+	120	ANd?	
	70-88	S16	D+	350	ASa	
	74-82	S14	D	160	BSs	Poor seeing all day
	89-101	S29	D+	375	ASl	
	90-92	S27	D-	20	BSs	
	108-109	S45	D-	25	BSs	
	120-121	S57	D-	20	ANc	Streamer
	129-140	S68	C-	145	ANd	
	182-183	S62	D-	5	BNs	
	203-215	S39	C+	370	ANb*	
	215-220	S27	D	65	BSs's	Streamers
	226-231	S16	D	70	ANd	
	237-266	N8	B	1000	ANd*	
	264-268	N23	D	90	ASf	
	270-276	N28	D	110	ANd	
	281-285	N39	D	110	ASa	
	291-293	N48	D-	30	ASa	
	295-335	N70	D-	15	BNs's	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
Mar. 30	349-354	N71	D-	55	ANd	
	356-22	N54	D-	30	BNs's	
	27-66	N17	D-	35	BNs's	
	72-74	S9	D-	15	BNs	
	80-86	S16	D	80	ANd*	
	84-94	S25	D+	160	ASa	
	85-88	S23	D	60	BSs	
	96-99	S33	D	90	BSs?	
	105-112	S45	C-	150	ANc	
	133-136	S70	D	50	ANc	
	158-160	S82	D	40	ANc	
	197-206	S43	D+	120	ANd	
	210-216	S32	D+	130	ANd	
	225-246	S10	D-	30	BNs's	
	258-267	N16	B-	400	ANc*	Streamers
	260-270	N22	C-	220	ANd	
	267-272	N26	D-	60	ASa	
	281-303	N50	B	750	ANc	Streamers
	304-318	N67	D-	15	BNs's	
Mar. 31	353-359	N68	D-	20	BNs's	
	7-11	N56	D-	25	ANm	
	25-32	N36	C	190	ANd	
	41-49	N19	D-	15	BNs's	
	55-67	N5	D+	135	ANd	
	59-65	N2	D	110	ANa	
	73-85	S16	C-	200	ASa	
	84-93	S24	D	55	BSs's	
	85-90	S24	D	90	ASf	
	104-110	S43	C-	180	BSs	
	114-117	S52	D	50	BSs	
	121-157	S73	D-	40	BNs's	
	162-174	S75	D-	10	BNs,s	
	180-184	S62	D-	60	ANd	
	190-203	S48	C-	180	ANd	
	204-210	S37	D	90	ANc	
	227-239	S11	D	75	ASa	
	255-266	N16	C	270	ASl	
	258-260	N15	D	80	ASf	
	264-269	N22	D	75	ANd*	
	270-272	N27	D-	30	ASa	
	283-299	N49	B	750	ANd	
	305-316	N66	D	70	ANd	
	328-330	N82	D-	10	BNs,s	
Apr. 7	349-8	N77	D-	25	BNs's	
	20-22	N43	D-	30	ANc	
	46-55	N12	D-	45	BSs	
	60-65	N2	D-	30	ASa	
	67-71	S6	D	90	ANc	
	88-102	S29	C	225	ANd	
(cont.)	112-113	S49	D-	15	ANa	Poor seeing

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
Apr. 12 (cont.)	72-79	S10	C-	150	ANd*	Streamer
	82-97	S20	D	60	ASa	
	111-115	S49	D+	130	ANd	
	129-130	S66	D-	15	BNs	
	149-150	S83	D-	10	BNs	
	202-210	S38	D-	25	BNs's	
	219-223	S23	D	80	ANd*	
	225-229	S17	D-	75	ASa	
	226-235	S15	D+	140	ANd	
	238-249	0	C	230	ANd	
	263-270	N21	D	70	ASa	
	270-280	N28	D+	180	AS1	
	274-276	N31	D	95	BSs	
	281-282	N37	D-	10	ASa	
	289-299	N52	C	270	ANd	
	317-319	N73	D	30	ANc	
Apr. 13	335-0	N78	D-	25	BNs's	Arch
	0-7	N59	D+	125	ANd	
	9-10	N54	D-	15	BNs	
	26-36	N33	C	230	ANd	
	40-42	N23	D-	40	ANd	
	48-63	N6	C	400	ANd	
	68-76	S8	D	110	ANd*	
	80-94	S22	D+	150	ASa	
	83-90	S20	D	40	BSs	
	100-115	S45	B-	425	ANd	
	153-154	S84	D-	30	ANb	Arching streamers
	176-188	S62	D-	20	BNs's	
	203-205	S40	D-	15	BNs's	
	208-216	S22	D	90	ANd	
	221-251	S9	B-	650	ANd*	
	234-236	S9	D-	25	BSs	
	260-262	N17	D	30	BSs	
	262-268	N20	D	120	ASa	
	271-275	N29	C-	135	BSs,s	
	278-283	N37	D-	50	ANd	
Apr. 18	314-315	N69	D-	10	BNs	Streamers
	337-338	N83	D-	15	BNs	
	345-352	N75	D-	10	BNs's	
	356-4	N64	D+	120	ANd	
	11-13	N52	D	50	ANm	
	26-36	N36	C-	200	ANd	
	43-72	N12	C+	410	ANd	
	73-83	S13	D-	25	BNs's	
	85-88	S22	D-	35	BSs	
	104-105	S40	D-	5	BNs	
	214-222	S27	C	160	ANd	
	225-237	S14	D+	100	ASa	
	228-231	S15	D-	35	BSs	
	245-280	N16	A-	1250	ANd	
	309-313	N66	D	80	ANd	
	321-337	N85	D	75	ANd	

Date	Spread	Lat. of Center of Intensity°	Importance	Area in p.u.	Class	Comments
1957						
Apr. 19	1-5	N61	D-	30	BNs's	
	11-14	N51	D	30	ANm	
	21-46	N31	B	750	ANd*	
	49-55	N13	C-	170	ASf	
	55-66	N5	C-	200	ANd*	
	66-76	S8	C+	250	ANd	
	78-86	S17	D+	140	ASf	
	85-91	S24	D	80	ANd	
	85-100	S27	D	110	ASa	
	113-119	S51	D	80	ANd	
	125-128	S62	D	60	ANc	
	131-133	S67	D-	10	BNs	
	146-147	S80	D-	10	BNs	
	174-186	S64	D-	25	BNs's	
	206-217	S35	D	90	ANd*	
	217-225	S23	D	85	ASa	
	226-235	S15	C-	145	BSs	Along loop, flare
	228-233	S13	D+	90	AS1	
	232-241	S8	C	225	ANd*	
	254-264	N16	D-	15	BNs's	
	268-275	N27	D	85	ANd	
	308-313	N66	D	50	ANd	
Apr. 20	1-15	N60	C-	170	ANd	
	21-37	N38	C+	375	ANd	
	41-47	N21	D	50	BSs	
	41-58	N17	D	115	ASa	
	64-65	0	D-	15	ASa	
	69-76	S9	C	300	ANc	
	81-94	S22	D	100	ASa	
	84-88	S22	D	50	BSs	
	101-108	S40	D-	15	BNs's	
	114-117	S52	D	60	ANd	
	127-137	S66	D	100	ANd	
	150-164	S83	D-	20	BNs's	
	202-208	S39	D	70	ANd	
	211-217	S30	D+	95	ANd	
	219-241	S17	B	550	ANd	
	254-265	N5	D	50	BSs	
	266-278	N28	C+	285	ANd*	
	309-315	N67	D-	35	ANd	
	329-330	N84	D-	5	BNs	
Apr. 21	338-355	N80	D-	25	BNs's	
	357-11	N60	C	220	ANd	
	12-20	N47	D	120	ASa	
	21-29	N40	D+	150	ANd	
	46-51	N15	D-	25	ASa	
	63-70	S2	D-	20	BNs's	
	70-76	S7	C	170	ANd	
	77-80	S15	D	50	BSs	
	80-87	S20	C+	350	ASf	
	(cont.) 95-101	S34	D-	20	BSs	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
Apr. 21 (cont.)	132-141	S69	D	60	ANd	
	157-192	S76	D+	90	BNs's	
	180-182	S63	D-	40	ANc	
	201-214	S34	B-	350	ANd*	
	215-227	S25	D	90	ASa	
	218-223	S23	D+	120	ASl	
	221-227	S20	D+	95	ASf	
	231-234	S12	D+	55	BSs	
	247-248	N3	D-	15	BNs	
	255-266	N20	D+	80	BSs's	
	257-262	N16	D-	40	ASa	
	271-278	N30	C+	215	BSs	
	278-283	N36	D+	120	ANd*	
	289-293	N47	D-	20	BNs's	
	296-300	N54	D	55	ANd	
	304-317	N65	C+	280	ANd	
	320-337	N82	D-	35	BNs's	
Apr. 24	5-11	N57	D-	110	ANd	
	19-23	N44	D-	70	ANd	
	43-44	N22	D-	10	BNs	
	54-56	N10	D-	20	?	
	62-65	N2	D	60	ANm	
	70-73	S7	D-	15	BNs	
	91-95	S28	D	75	ASa	
	96-116	S40	A	1450	ANd*	Ascended
	108-113	S45	D+	110	BSs	
	116-121	S54	C-	190	ASa	
	203-204	S41	D-	5	BNs	
	207-226	S30	C+	300	ANd	
	244-266	N9	A-	1050	ANd*	
	266-274	N27	D	60	ASa	
	286-290	N43	D+	110	BSs	
	309-318	N67	C	225	ANd	
Apr. 27	334-10	N73	D-	35	BNs's	
	2-6	N62	D+	90	ANm	
	21-46	N32	B-	400	ANd*	
	46-53	N16	D-	45	ASa	
	47-52	N16	D	80	BSs	
	53-65	N8	C	220	ASf	
	55-65	S4	C+	375	ANd*	
	81-83	S17	D-	20	BNs	
	95-110	S39	C+	325	ANd	Streamer
	134-147	S74	D-	25	BNs's	
	155-188	S74	D-	65	BNs's	
	204-227	S30	B-	380	ANd*	
	213-215	S31	D	60	ASf	
	231-237	S11	D	125	ASa	
	237-241	S7	D	80	ANc*	
	243-250	N1	D-	25	ANd?	
	256-287	N25	B	575	ANd	
	258-268	N18	B-	425	ANc	
	293-298	N51	D-	25	BNs's	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
Apr. 30	346-347	N77	D-	10	BNs	
	356-4	N67	D-	15	BNs's	
	19-21	N45	D-	25	ANm	
	37-38	N28	D-	10	BNs	
	48-50	N16	D-	20	BNs's	
	53-59	N10	B	750	ASf,f	
	60-78	S3	D+	190	AND*	
	83-104	S28	B-	525	AND	
	129-146	S77	D-	60	BNs's	
	170-172	S73	D-	10	BNs's	
	184-191	S58	D-	50	BNs's	
	201-206	S41	D+	130	AND	
	213-229	S25	B	800	AND	Streamers
	235-245	S5	D	100	ASa	
	245-250	N3	D+	160	AND	
	249-254	N6	C	215	ANb	
	252-260	N9	D+	170	AND*	
	260-261	N16	D-	15	BSs	
	265-272	N24	D	60	ASa?	
	278-287	N40	D	80	AND	
	298-317	N57	C+	275	AND	
May 2	0-3	N65	D-	60	ANc	
	7-8	N59	D-	5	BNs	
	43-45	N22	D-	15	ANm	
	62-80	S8	C+	350	AND	
	82-85	S14	D-	15	BNs	
	90-97	S27	D	85	BSs	
	92-95	S27	D	90	AS1	
	102-106	S39	D+	80	BSs?	or ANm?
	134-137	S69	D-	20	AND	
	159-161	S85	D-	10	BNs	
	217-219	S28	D-	10	ANm	
	226-229	S19	D-	40	ASa?	
	235-237	S10	D-	30	BSs	
	254-261	N1	D+	120	ANc?	or BSs?
	271-273	N26	D-	10	BNs,s	
	278-281	N34	D-	10	BNs,s	
	284-310	N54	B	625	AND	
	318-320	S73	D-	15	ANm	
May 3	6-11	N57	D+	70	ANm	
	43-48	N21	D+	120	AND	
	58-67	N5	D-	60	ASa	
	87-100	S27	D	90	ASa	
	89-111	S35	C	190	BSs's	
	135-139	S71	D	60	BNs's	
	176-182	S68	C-	180	ANa	
	177-192	S60	D+	220	AND	
	198-200	S47	D-	20	ANa	
	217-230	S23	D+	110	AND*	
	224-231	S19	D-	120	ASa	
(cont.)	237-240	S8	D-	30	?	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
May 3 (cont.)	253-258	0	C	180	ANc	
	277-281	N33	D	70	ANc	
	290-309	N51	B+	1000	ANd	
	315-317	N70	D	40	ANc	
	333-334	N86	D-	5	BNs	
May 4	355-16	N63	C+	375	ANd	
	43-48	N21	C	220	BSs	
	46-54	N16	D+	150	ASf	
	56-68	N4	C-	180	ANd*	
	64-72	S4	C	325	ASl	
	87-102	S28	C	230	ANd	
	106-110	S42	D+	90	ANm	
	115-122	S53	D+	130	ANd	
	128-129	S62	D-	15	ANc	
	134-139	S71	D	60	ANd	
	164-168	S80	D-	50	BNs's	
	193-194	S52	D-	20	BNs	
	221-226	S23	D-	45	?	
	231-244	S9	C+	430	ASa	
	233-242	S11	C	210	BSs	
	244-250	N2	C-	180	ASf	
	248-258	N7	C	200	ANd	
	275-276	N30	D-	20	ASf?	
	290-311	N52	B	800	ANd	
	315-317	N70	D-	25	ANm	
May 8	34-36	N32	D-	20	ANm	Poor seeing all day
	47-55	N19	D	75	BSs's	
	65-70	S1	D	50	ASl	
	74-76	S8	D	60	BSs	
	84-86	S18	D-	15	ASl?	
	94-103	S32	D	80	ASa	
	101-116	S40	B-	370	ANd*	
	135-138	S70	D	85	ANd	
	158-160	S86	D-	60	BNs?	
	184-188	S61	D	65	ANm	
	193-201	S50	D-	15	BNs's	
	209-218	S35	D	80	ANd	
	224-225	S23	D-	10	BNs	
	229-240	S13	D-	25	BNs's	
	271-281	N28	D-	30	BNs's?	
	284-290	N40	D	100	ANc	
	288-292	N43	D-	35	ASa	
	290-294	N45	D-	25	ANd	
	295-308	N54	D+	180	ANd	
	310-311	N63	D-	10	BNs	
	314-318	N68	D-	20	BNs's	
May 9 (cont.)	335-336	N87	D-	35	ANc	Poor seeing all day
	34-42	N28	C-	140	ANd	
	51-52	N15	D-	5	BNs	
	74-76	S8	D+	80	ANc	
	83-88	S18	D-	30	ANd	

Date	Spread	Lat. of Center of Intensity ^o	Importance	Area in p.u.	Class	Comments
1957						
May 9	100-116	S41	C	180	ANd	
(cont.)	106-116	S43	D+	175	ANe	
	120-126	S57	D	90	ASa	
	139-146	S74	D+	130	ANd	
	186-190	S59	D-	80	ANm	
	210-215	S35	D	45	ANd	
	219-221	S27	D-	25	ASa	
	226-234	S17	D	130	ASl	
	234-239	S10	C+	190	BSs	Flare along hedgerow
	239-248	S5	D+	170	ANd*	
	251-270	N9	C+	350	ANd*	
	271-272	N25	D-	15	BSs	
	279-280	N33	D-	25	?	
	283-286	N37	D	50	ASf?	
	288-312	N52	C+	325	ANd	
	317-319	N71	D-	20	ANm	
May 11	9-10	N59	D-	20	ANm	} Omitted in the Analysis
	29-39	N33	B	500	ANd	
	61-66	N5	D	75	ANd	
	P.A. 90° to 315° missing					
May 12	337-338	N87	D-	5	BNs	
	11-13	N51	D	25	ANc	
	22-23	N45	D-	10	BNs	
	28-39	N35	C+	390	ANd	
	54-67	N7	D+	150	ANd	
	73-76	S7	D	60	ANc*	
	76-90	S12	D+	130	ASa	
	85-96	S22	D-	25	BSs's	
	97-103	S35	C	280	ANd	
	129-133	S63	D-	20	BNs's	
	169-178	S80	D-	20	BNs's	
	182-190	S62	C-	155	ANd	
	213-215	S34	D+	120	ANb?	or BSs?
	215-233	S26	C-	250	ANd	
	239-240	S8	D-	5	BNs	
	271-282	N28	C	200	ANd	
	284-300	N43	C+	375	ANd	
	318-323	N72	D	80	ANm	
May 16	352-6	N69	D-	40	BNs's	
	8-10	N60	D-	20	ANm	
	21-23	N47	D-	35	ANm	
	31-39	N34	C+	375	ANd	
	41-51	N23	D	50	ANd	
	57-58	N12	D-	5	BNs	
	61-73	N3	C	280	ANd	
	78-84	S11	D	50	ANd	
	87-94	S22	D-	35	BSs's	
	89-96	S22	D+	130	ASa	
(cont.)	109-116	S43	D-	50	ANd	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
May 16 (cont.)	126-138	S62	D	90	ANd	
	137-148	S72	D-	15	BNs's	
	165-206	S67	D	55	BNs's	
	219-226	S27	B	300	BSs	Flare
	229-241	S14	C-	215	ASa	
	230-234	S17	D-	40	ANd	
	263-291	N21	D-	35	BNs's	
	327-330	N79	D	40	ANc	
May 17	9-14	N59	D-	20	BNs's	
	22-24	N46	D-	25	ANm	
	29-40	N34	C	225	ANd	
	47-60	N15	D	50	ANd	
	65-72	N2	C-	300	ANd	
	75-83	S12	D	140	ASa	
	85-99	S22	D	250	ASl	
	89-92	S22	D	40	BSs	
	102-108	S36	D	60	ANd	
	107-112	S41	C-	170	ASf	
	115-117	S47	D-	15	BNs	
	127-136	S62	D+	120	ANd	
	138-158	S77	D-	45	BNs's	
	169-171	S79	D	40	ANc	
	172-180	S73	D	25	BNs's	
	184-192	S63	D	100	ANd	
	216-223	S29	C+	270	BSs	Flare
	223-225	S25	D+	80	ASl	
	227-236	S17	C-	190	ASa	
	229-242	S17	D+	100	ANd*	
	246-265	N12	C+	425	ASa	
	261-262	N13	D-	40	BSs	
	267-272	N20	D	70	ANd	
	276-282	N30	D	100	ANd	
	283-293	N38	D-	25	BNs's	
	304-312	N58	D-	30	BNs's	
	322-331	N77	C	325	ANd	
May 18	347-352	N80	D-	10	BNs,s	
	9-21	N55	D-	30	BNs's	
	25-30	N42	D	100	ANd*	
	27-31	N41	D	70	ASa	
	30-38	N37	C	250	BSs	
	37-38	N32	D-	20	BSp	
	43-53	N22	D-	15	BNs's	
	56-58	N13	D-	20	ASl	
	78-98	S13	C+	350	ASl	
	80-91	S14	D+	150	ASa	
	81-105	S22	C	200	BSs's	
	120-135	S58	C	280	ANd	
	182-186	S66	D	40	ANc	
	214-226	S30	D+	160	ANd	
	228-235	S17	C-	175	ANd*	
	(cont.) 238-244	S9	D	90	ASl	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
May 18 (cont.)	257-263	N11	D+	130	ASa	
	265-266	N16	D-	20	ASa	
	266-272	N19	D+	140	BSs	
	284-299	N42	B-	650	ANd	
	319-324	N71	D	70	ANc	
May 19	26-28	N43	D-	30	ANc	
	28-33	N39	D+	130	ANb?	Or BSs?
	44-54	N20	C-	170	ANd	
	61-68	N4	D	100	ASa	
	64-67	N4	D	35	ANc*	
	72-77	S6	D-	80	ASa	
	81-92	S15	C+	225	ANd*	
	84-87	S16	D	35	BSs	
	87-89	S18	D-	25	ASa	
	108-112	S40	D-	40	ASa	
	120-130	S57	C+	380	ANd	
	135-137	S66	D-	30	ANm	
	186-190	S62	D-	25	BNs's	
	214-222	S32	D	50	ASa	
	219-220	S30	D-	20	ASl	
	229-230	S20	D-	20	BSs	
	229-250	S11	D	90	ANd*	
	253-266	N8	C+	375	ANd	
	283-285	N34	D-	20	BSs	
	287-298	N43	B-	425	ANb*	
	317-327	N71	C	280	ANd	
May 21	347-2	N75	D-	35	BNs's	
	9-10	N60	D-	25	ANm	
	13-21	N52	D	20	BNs's	
	28-42	N35	D	55	BNs's	
	47-55	N20	D+	140	ANd*	
	56-58	N13	D-	15	BSs	
	59-61	N10	D	20	ASa	
	64-69	N3	D-	45	ANd	
	70-79	S5	D-	60	ANd	
	102-104	S33	D-	10	BNs	
	173-192	S69	D-	30	BNs's	
	205-224	S30	C+	240	BSs's	
	222-237	S22	C	290	ANd*	
	242-267	N8	B	750	ANd	Streamers
	264-280	N22	C+	375	ANd	
	289-292	N41	D	40	ASa	
	289-298	N43	C	230	ANd*?	
	311-312	N62	D-	10	BNs	
	318-321	N80	D	50	ANm	
May 22	354-355	N76	D-	20	ANc	
	359-0	N72	D-	5	BNs	
	7-16	N61	D+	170	ANd	
	24-25	N46	D-	10	BNs	
	26-28	N44	D	70	ANb	
(cont.)						

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
May 22 (cont.)	60-74	N4	D	60	ASa	
	82-88	S14	D-	25	BNs's	
	95-118	S39	D	110	ANd	
	113-119	S46	D	115	ANd	
	172-173	S78	D-	10	BNs	
	186-188	S64	D-	35	ANm	
	205-206	S56	D-	5	BNs	
	216-224	S30	C	190	ANd	
	242-247	S6	D	60	BSs	
	247-249	S3	D-	20	ASa	
	252-258	N3	D+	140	BSs's?	
	264-267	N15	D-	25	BNs's	
	287-293	N39	D	85	BSs	
	307-320	N61	D-	35	BNs's	
May 23	338-0	N81	D	60	BNs's	
	9-14	N60	D+	145	ANb	
	14-29	N48	B-	500	ANd*	Arches
	29-33	N39	D+	100	BSs	
	42-49	N26	D-	25	BNs's	
	57-64	N11	D-	30	ANd	
	76-77	S6	D-	15	BNs	
	85-101	S30	C+	300	ANd	
	110-116	S42	D+	150	ANd	
	137-140	S68	D-	30	ANd	
	150-158	S83	D-	30	BNs's	
	184-192	S62	D	90	ANc	
	199-206	S48	D-	15	BNs's	
	210-222	S35	C	275	ANd	
	222-231	S25	D+	150	ANd*	
	229-231	S21	D-	25	ASa	
	231-237	S18	D+	140	BSs	
	237-244	S11	D	85	AS1	
	241-242	S9	D-	20	BSs	
	245-248	S5	D-	15	AS1?	
	252-260	N4	D+	135	ASf	
	267-269	N17	D-	30	ASa	
	271-274	N21	D	50	ANm*	
	283-285	N33	D-	15	ANa	
	288-290	N38	D-	25	ANm	
	309-311	N59	D	40	ANm	
	318-324	N71	D	80	ANd	
May 26	338-9	N79	D-	45	BNs's	
	10-18	N68	C	230	ANd	
	25-34	N44	D+	90	ANc	
	43-61	N22	B	650	ANd*	Arch
	59-65	N10	D-	40	BSs's	
	61-68	N8	D-	35	ASa	
	66-80	0	D	40	ANd	
	86-104	S24	B	550	ANd*	Flare along hedgerow
(cont.)	92-104	S27	D	55	ASa	

Date	Spread	Lat. of Center of Intensity ^o	Impor- tance	Area in p.u.	Class	Comments
1957						
May 26 (cont.)	105-106	S34	D-	15	BSs	
	108-118	S43	B-	400	ANd	
	131-132	S60	D-	10	BNs	
	140-142	S69	D-	20	ANc	
	152-156	S82	D-	20	BNs's	
	172-179	S76	D-	20	BNs's	
	187-193	S62	D	60	ANd	
	197-203	S52	D-	15	BNs's	
	212-223	S35	B-	425	ANd	
	225-226	S26	D-	40	ASa	
	230-238	S17	C	165	BSs	
	239-248	S6	D+	140	ASf	
	241-253	S6	D+	160	ANd*	
	257-260	N6	D-	25	BSs	
	262-265	N12	D-	30	ANm	
	270-274	N20	D-	90	ANd	
	281-298	N42	C-	140	ANd	
	304-311	N55	D-	20	BNs's	
	318-321	N68	D+	70	ANm	
	323-337	N71	D-	20	BNs's	
May 27	10-16	N59	C	225	ANd	
	29-32	N42	D	40	ANm	
	43-60	N20	B	650	ANd	
	61-85	N6	B-	500	ANd*	Streamers
	89-102	S23	C+	425	ASl	
	102-112	S34	C+	375	BSs's	
	117-150	S58	D-	30	BNs's	
	153-156	S83	D-	60	ANc	
	187-192	S63	D-	45	ANd	
	218-232	S27	C	285	ANd	
	233-243	S14	D+	145	ANd	
	243-249	S6	D	80	ASl	
	246-250	S5	D	60	BSs	
	263-269	N14	D	90	ANd	
	285-289	N35	D	35	BSs	
	294-295	N43	D-	10	BNs	
	303-305	N52	D-	30	ANm	
	319-323	N69	D	90	ANm	
May 30	338-340	N86	D	40	ANm	Omitted in the Analysis
	352-10	N73	D-	15	BNs's	
	10-19	N60	C	235	ANc	
	38-61	N23	D-	30	BNs's	
	66-77	N2	D-	20	BNs's	
	78-79	S5	D-	20	ANm	
	88-89	S16	D-	15	BSs	
	103-114	S43	B-	475	ASl	
	122-142	S61	C	320	ANd	
	146-155	S77	D	60	ANd	
	159-164	S89	D	70	ANm	
(cont.)						

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
May 30 (cont.)	173-175	S79	D-	35	ANm	Omitted in the Analysis
	176-179	S76	D-	10	BNs's	
	186-194	S64	D	100	ANd	
	P.A. 225° to 315° missing					
May 31	338-11	N84	D-	45	BNs's	or ANm?

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
June 1 (cont.)	228-250	S14	D-	35	BNs's	Flare
	266-280	N19	C-	210	ANd*	
	280-281	N26	D-	20	BSs	
	282-288	N31	D+	115	ASa	
	286-297	N37	C+	230	ANd*	
	305-311	N53	D	85	ANd	
	314-316	N61	D-	10	ANm	
	321-326	N69	D+	80	ANm	
June 2	8-9	N66	D-	5	BNs	Surge along hedgerow
	10-12	N64	D	45	ANm	
	29-32	N45	D	70	ANm	
	34-35	N41	D-	10	BNs	
	47-48	N28	D-	5	BNs	
	49-52	N25	D	75	ANd	
	71-94	S3	C+	450	ANd*	
	76-81	S4	C+	180	BSs	
	95-99	S21	D-	40	ASa	
	102-106	S29	D	50	ANd	
	112-114	S38	D-	15	BNs,s	
	148-152	S75	C-	135	ANm	
	175-191	S68	D-	15	BNs's	
	196-201	S57	D	90	ANd	
	204-208	S49	D	50	ANd	
	222-226	S31	D-	15	BNs's	
	232-234	S22	D	50	BSs	
	241-246	S11	D	80	ANd	
	247-252	S5	D-	30	ASa	
	249-251	S5	D-	30	BSs	
	268-273	N14	D+	125	ANd*	
	274-280	N22	D-	55	AS1	
	276-280	N33	D-	50	BSs	
	281-297	N36	B	650	ANd*	
	304-317	N53	C+	270	ANd	
	320-325	N68	D	85	ANd	
June 4	9-10	N66	D-	25	ANc	Ascending
	37-39	N37	D-	30	ANm	
	42-44	N32	D-	20	ANc	
	50-97	N11	A-	1300	ANd	
	104-128	S42	B	600	ANd	
	147-153	S75	D	80	AN1	
	195-202	S56	D	105	ANd	
	224-232	S28	D-	25	BNs's	
	234-237	S19	D	60	ANm	
	241-242	S14	D-	20	ASa	
	244-246	S10	D	60	ANc	
	263-265	N9	D-	20	ANm	
	274-283	N25	D-	45	ASa	
	290-298	N39	D+	140	ANd	
	298-315	N56	B	1050	ANd	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
June 5	21-24	N54	D-	40	ANc	or BSs?
	43-46	N32	D	65	ANm?	
	51-52	N24	D-	20	ASa	
	56-62	N17	D	100	ANc*	
	62-63	N13	D-	15	BSs	
	78-83	S5	D-	40	ANc	
	88-96	S16	D-	50	ASa	
	116-123	S43	C-	320	ANm	
	150-158	S78	D-	40	ANd	
	182-184	S73	D-	20	BNs	
	193-196	S62	D	50	ANm	
	231-238	S21	D	50	ASa	
	234-237	S20	D	80	AS1	
	237-243	S18	D	40	BSs	
	253-261	N3	D-	25	?	Poor seeing
	267-271	N12	D-	45	ANm	" "
	284-298	N35	D	115	AND	" "
	298-305					" "
June 6	350-354	N86	D	40	BNs	Poor seeing all day
	0-21	N65	D-	35	BNs	
	24-27	N51	D-	40	AND	
	39-59	N30	D	75	ASa	
	43-49	N31	C	210	BSs	Streamer
	61-73	N6	C-	180	AND*	
	85-90	S16	D	80	AND*	
	92-95	S18	D-	30	AS1	
	100-108	S27	D	50	AND	
	107-111	S34	D	190	ANc	
	120-128	S48	C	200	ANb?	
	132-149	S62	D-	20	BNs*	
	154-157	S80	D	45	ANc	
	190-193	S64	D	35	ANm	
	204-206	S51	D-	30	ANc	
	231-237	S23	D-	30	AS1	
	245-248	S10	D-	35	AND	
	270-281	N20	D-	150	AND	
	288-293	N35	D-	55	AND	
	294-297	N40	D	50	AND	
	299-318	N41	D-	40	BNs*	
	320-322	N65	D-	25	ANc	
	331-334	N76	D-	10	BNs, s	
June 7	13-18	N61	D	60	AND	
	38-65	N21	C*	425	ASa	
	58-64	N15	D	80	BSs	
	68-79	N5	C	300	AND	
	85-99	S19	C-	210	AND*	
	95-114	S27	C-	350	ASa	
	101-106	S27	D*	110	BSs	
	103-112	S40	D	80	AND*	
	116-125	S5	D	210	AND	
	128-129	S5	D	15	BNs	Bad seeing
	289-292	N41	D	50	ANm	" "
	300-302					" "

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
June 9	347-16	N75	D	50	BNs's	
	22-34	N51	C	250	ANd	
	40-50	N32	C	200	ANd	
	55-60	N20	D	85	ANd	
	70-76	N4	D-	20	ASa	
	79-90	S7	D+	195	ANd	
	94-97	S19	D	35	ANc	
	99-104	S25	D+	100	BSs	
	102-107	S28	D	110	ASa	
	106-110	S31	D+	90	BSs?	or AND
	116-120	S41	C	250	ANd	
	148-150	S72	D	25	?	
	169-170	S88	D-	5	BNs	
	196-202	S57	D	70	ANd	
	222-227	S32	D-	20	BNs's	
	234-237	S22	D	110	ANm*	
	236-250	S15	C-	260	ASa	
	252-259	S3	C-	150	ANd	
	262-267	N8	D	65	ANd	
	274-279	N30	D+	120	ANd	
	283-296	N33	B	600	ANd	
	311-317	N58	D	60	ANm	
	327-332	N72	D	45	ANd	
June 10	338-21	N78	D-	45	BNs's	
	23-25	N54	D-	30	ANm	
	29-45	N38	D+	130	ANd	
	55-57	N22	D	35	ANm	
	94-110	S23	C	140	BSs's	
	96-98	S19	D-	40	ASa	
	99-101	S22	D-	25	BSp	
	115-122	S42	C-	160	ANc*	Streamer
	137-158	S67	D-	25	BNs's	
	166-190	S83	D-	30	BNs's	
	191-204	S60	D+	160	ANd	
	226-231	S29	D	50	ANd*	
	228-250	S23	C	275	ASa	
	242-245	S14	D	50	BSs	
	251-254	S6	D	45	ANc*	
	270-273	N24	D-	25	ASa	
	277-286	N22	C	200	ANd	
	287-297	N33	C+	400	ANd	
	307-308	N49	D-	10	BNs	
	315-318	N59	D	40	ANd	
	327-332	N71	D+	120	ANd	
June 11	33-37	N43	D-	15	BNs,s	
	38-41	N39	D+	85	BSs?	or ANm
	49-57	N26	D	55	BSs's	
	57-90	N6	B	800	ANd*	Streamer
	95-104	S21	D-	50	ASa	
	104-107	S27	D-	15	BSs	
	109-113	S33	D	30	ASa	
(cont.)	113-132	S44	B-	500	ANd	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
June 11 (cont.)	140-156	S70	D-	15	BNs's	
	185-208	S61	D	50	BNs's	
	221-225	S34	D	45	ANm	
	229-235	S26	C-	160	ANd	
	238-241	S18	D	55	BSs	
	242-252	S11	D-	30	ASa	
	248-251	S9	D-	40	BSs	
	256-258	S1	D-	10	BNs's	
	262-265	N6	D-	20	ANc	
	276-285	N25	D	60	ANc	
	290-298	N34	D+	130	ANd	
	306-318	N55	D+	125	ANd	
	323-327	N67	D-	20	BNs's	
	330-333	N73	D+	115	ANm	
June 14	14-15	N65	D-	15	BNs	
	21-25	N56	D+	130	ANd	
	30-39	N43	D+	125	ANe	
	43-63	N29	B-	550	ANd*	
	66-70	N11	D	70	ASa	
	70-73	N7	D-	50	BSs	
	71-81	N5	D	65	ASa	
	73-77	N4	D+	140	ASf	
	74-78	N3	D	60	ANd*	
	85-97	S7	D-	45	ANc*	Streamer
	94-97	S16	D	50	ANc	
	99-100	S20	D-	15	BSs	
	108-110	S30	D	35	BSs	
	115-124	S41	C	190	ANd	
	132-135	S54	D-	30	ANd	
	142-151	S67	D-	15	BNs's	
	174-187	S78	D-	30	BNs's	
	188-199	S67	C	235	ANc	
	228-229	S30	D-	15	BNs	
	232-240	S22	B-	500	ASl	Fine example of loops
	236-238	S22	D	60	BSs	
	240-241	S18	D	75	BSs	
	243-250	S12	D	80	ANd	
	263-277	N12	B	800	ANd*	Streamers
	277-278	N19	D	60	ASa	
	289-296	N35	D	55	ANd	
	329-337	N74	D+	120	ANd	
June 15	338-20	N83	D-	55	BNs's	
	21-25	N57	D	75	ANm	
	34-55	N36	B-	450	ANd	
	61-65	N17	D	25	ASa	
	64-67	N15	D	60	ANd*	
	67-75	N10	C	210	BSs	
	75-81	N2	D	100	ASa	
	93-94	S14	D-	25	ANe	
	(cont.) 94-104	S19	C	250	ANd	

Date	Spread	Lat. of Center of Intensity°	Importance	Area in p.u.	Class	Comments
1957						
June 15 (cont.)	109-114	S31	D-	30	BNs's	
	119-125	S41	D	50	AND	
	124-133	S49	D	70	ASa	
	126-128	S47	D-	25	BSs	
	136-139	S57	D	45	AND	
	141-147	S64	D-	20	BNs's	
	157-163	S81	D-	10	BNs's	
	189-200	S66	C	235	AND	
	231-239	S25	D+	150	ASl	
	237-250	S17	D	45	ASa	
	256-277	N5	C-	180	AND	
	297-299	N38	D-	20	BNs	
	312-314	N53	D-	15	ANm	
	320-328	N64	D-	20	BNs's	
	330-335	N73	D	80	AND	
June 16	350-4	N83	D-	20	BNs's	
	23-28	N54	D+	120	ANm	
	41-43	N38	D-	25	BSs	
	44-52	N32	C-	175	AND	
	53-62	N22	D	90	ASa	
	57-65	N19	D+	100	BSs's	
	66-72	N10	D+	120	AND*	
	74-82	N3	D	60	ASa	
	80-82	S1	D-	20	ANm	
	94-104	S19	C	285	AND	
	104-111	S27	D-	20	BNs's	
	112-114	S33	D	65	ANm	
	119-128	S44	D-	10	BNs's	
	130-131	S51	D	50	ANc*	
	131-135	S53	D+	140	ASa	
	131-144	S57	C	240	AND	
	152-154	S73	D-	15	ANc	
	164-190	S82	D-	50	BNs's	
	192-200	S65	D	85	AND	
	230-241	S24	D-	60	ASa	
	232-234	S27	D	35	BSs	
	242-248	S14	D	60	AND	
	250-257	S7	D+	160	AND	
	258-279	N10	B	650	AND	
	297-310	N38	D	75	AND	
	324-331	N66	D-	20	BNs's	
	333-338	N76	D	85	AND	
June 17	333-337	N74	D	50	ANm	
	342-5	N89	D-	35	BNs's	
	21-34	N56	C+	475	AND*	Streamers
	33-45	N45	D+	130	ASf	
	41-46	N38	D	70	AND*	
	49-55	N29	D	40	BSs	
	58-68	N18	D+	160	ASa	
	(cont.) 59-73	N18	D	80	BSs's	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
June 17 (cont.)	68-76	N7	D	130	ASa	
	79-80	N1	D-	35	BSs	
	94-101	S16	D	125	ANd	
	104-116	S28	D	105	BSs's	
	132-142	S54	D+	140	ANd	
	146-155	S69	D-	25	BNs's	
	159-161	S79	D-	20	ANc	
	172-173	S88	D-	15	ANa	
	194-198	S66	D	75	ANd	
	204-205	S56	D-	5	BNs	
	209-219	S47	D-	30	BNs's	
	223-233	S34	D	90	ANd	
	237-252	S18	D+	145	ANd	
	257-274	N4	C+	325	ANd	
	274-287	N19	C+	360	ANd	
	286-291	N27	D-	15	BNs's	
	294-307	N38	C-	165	ANd	
	315-316	N55	D-	25	ANm	
	318-332	N64	D-	20	BNs's	
June 18	334-338	N76	D	80	ANm	
	356-7	N83	D-	35	BNs's	
	22-35	N55	B-	550	ANd	
	35-67	N32	B+	950	ANd*	Streamers
	66-80	N9	D	150	ASa	
	94-106	S12	D	85	ANd*	
	106-109	S27	D	80	BSs	
	110-116	S32	D	110	ASa	
	138-144	S60	D	100	ANd	
	220-242	S34	B	700	ANd	
	246-247	S15	D-	10	BNs	
	252-254	S8	D-	20	BNs?	
	262-276	N7	C+	365	ANd	
	279-284	N20	C	190	ASf	
	292-296	N34	D	75	ANc	
	299-310	N43	D+	145	ANd	
June 19	334-338	N76	D	70	ANm	
	341-14	N85	D	85	BNs's	
	20-36	N54	B-	550	ANd	Arch
	36-48	N38	C+	375	ANd*	
	48-55	N32	C	280	BSs	
	49-67	N21	D	100	ANd*	Streamer
	70-73	N9	D-	65	ASa	
	73-75	N7	D-	15	BSs	
	85-112	S26	D	70	BNs's	
	119-120	S39	D-	20	BNs	
	128-135	S51	D-	50	BNs's?	
	142-145	S62	D	45	ANm	
	155-158	S75	D-	40	ANm	
	161-184	S88	D-	55	BNs's	
	(cont.) 196-207	S60	D-	35	BNs's	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
June 19 (cont.)	224-233	S33	B-	550	ANd	Arch
	234-249	S21	D-	30	BNs's	
	251-255	S8	D-	40	ASa	
	258-262	S1	D	100	ANd	
	264-270	N6	D-	15	BNs's	
	273-277	N13	D	80	BSs	
	278-282	N19	D	65	ANd	
	287-298	N30	D-	10	BNs,s	
	308-311	N49	D	50	ANc	
	311-321	N55	D	15	BNs's	
June 20	337-342	N77	D	80	ANd	Bad seeing all day Omitted in the Analysis Arch
	22-37	N55	C	300	ANd	
	43-46	N38	D	65	ANm	
	81-82	N1	D-	15	BNs?	
	121-123	S40	D-	10	?	
	137-139	S56	D-	40	ANc	
	195-198	S66	D	40	ANd	
	225-232	S34	C+	300	ANd	
	240-243	S21	D	15	BNs,s	
	253-259	S10	D	150	ANd?	
	283-294	N26	D	100	ANd?	
	293-307	N39	D	90	?	
June 22	340-347	N80	C-	150	ANd	
	350-351	N87	D-	15	BNs	
	7-20	N71	D-	25	BNs's	
	22-23	N61	D-	10	BNs	
	35-39	N46	D-	15	BNs	
	57-61	N24	D-	15	BNs,s	
	71-80	N9	C	200	ANd*	
	79-84	N1	D+	130	ASa	
	80-87	S2	C-	170	ANd*	
	93-100	S13	D	150	ANd?	
	106-107	S23	D-	20	BSs	
	110-114	S29	D	60	ASa	
	121-132	S45	C	200	ANd	
	135-142	S56	D-	20	BNs's	
	153-157	S72	D-	10	BNs's	
	173-187	S82	D-	30	BNs's	
	200-207	S60	D-	30	BNs's	
	225-245	S29	B-	400	ANd	
	244-251	S15	D	65	ASa	
	251-256	S11	D	60	ASa	
	258-269	O	D	70	ANd?	
	278-279	N15	D-	5	BNs	
	283-284	N21	D-	10	ANc	
	288-293	N28	D	80	ANd*	
	292-297	N31	D	110	ASf	
	296-304	N37	D+	125	ANd*	
	305-312	N45	D+	160	BSs	
	312-316	N51	D	80	BSs	
	313-317	N52	D	100	ASf	
	326-328	N64	D	30	ANc	

Date	Spread	Lat. of Center of Intensity°	Importance	Area in p.u.	Class	Comments
1957						
June 23	342-10	N86	D-	40	BNs's	Along loops
	49-51	N33	D-	15	ANc	
	58-66	N21	D+	150	ANd	
	71-75	N10	D+	130	BSs	
	75-79	N6	D	80	AS1	
	80-83	N1	D	70	AS1	
	85-90	S5	D	85	ANd	
	102-105	S20	D	30	ANd	
	106-116	S28	D	100	ASa	
	112-113	S30	D-	15	BSs	
	126-133	S47	C+	300	ANd	
	134-166	S72	D-	25	BNs's	
	154-203	S83	D-	45	BNs's	
	231-247	S27	C	240	ANd	
	246-263	S3	D-	35	ASa	
	270-278	N10	D-	20	BNs's	
	291-304	N35	C+	300	BSs's	
	299-303	N38	D+	135	ANd*	
	305-307	N43	D-	15	ASa	
	310-318	N50	D-	35	BSs	
	319-329	N60	D	110	ANd	
June 24	342-343	N79	D-	5	BNs	Poor seeing all day
	5-6	N78	D-	5	BNs	
	23-24	N59	D-	20	ANm	
	36-39	N46	D	45	ANm	
	47-50	N34	D	60	ASa?	
	56-66	N19	D+	100	ANd	
	66-82	N10	C+	350	ANd	
	102-109	S21	D	70	ASa	
	105-108	S23	D	55	BSs	
	111-113	S29	D-	30	ASf	
	114-116	S32	D-	25	ASf?	
	121-122	S39	D	20	BSs	
	129-133	S48	C	150	BSs?	
	149-153	S68	D-	25	ANd	
	217-240	S39	B	750	ANd	
	244-249	S17	C-	180	ANm	
	252-262	S5	C-	300	ANd	
	268-286	N22	B+	1000	ANd	
	298-302	N37	C-	140	ANb?	
June 25	45-51	N37	D	80	ANd?	Poor seeing all day
	88-90	S5	D-	15	ANm	
	92-115	S18	C-	315	ASa	
	100-103	S18	D	60	BSs	
	118-130	S40	C	175	ANd*	
	131-135	S48	C	150	BSs?	
	152-156	S70	D	45	ANd	
	199-201	S64	D	50	ANm	
	221-247	S35	B+	1150	ANd*	
	246-250	S16	D	75	BSs	
	(cont.) 252-264	S7	C	300	ASa	

Date	Spread	Lat. of Center of Intensity°	Importance	Area in p.u.	Class	Comments
1957						
June 25 (cont.)	265-300	N19	A	2400	ANd*	Streamers
	301-303	N38	D+	130	BSs	
	316-325	N57	D+	115	ANd	
	329-331	S66	D	20	ANc?	BNs?
June 26	348-22	N85	D	75	BNs's	
	30-51	N45	D-	30	BNs's	
	52-57	N32	D	150	ANc	
	87-101	S6	C	250	ANd*	Streamer
	100-114	S21	D+	190	ASa	
	101-111	S21	D+	115	BSs's	
	116-121	S33	D	90	BSs	
	119-134	S42	D+	200	ASf	
	128-132	S45	D	55	BSs	
	137-143	S56	C	200	ANd?	or BSs?
	153-160	S70	D+	140	ANd	
	168-197	S83	D-	30	BNs's	
	199-204	S64	D	70	ANd	
	216-244	S36	B	650	ANd*	Streamers
	240-247	S22	D	90	ASa	
	246-252	S17	D	80	ASl	
	252-263	S7	D+	200	ASa	
	254-268	S5	D+	190	BSs's	
	270-297	N17	B+	1050	ANd	Streamers
	297-312	N39	B-	475	ANd	
	315-329	N57	C+	550	ANd	Streamer
	331-338	N70	D-	25	BNs's	
June 27	338-341	N74	D-	20	BNs's	
	349-350	N84	D-	15	BNs	
	351-26	N75	D-	45	BNs's	
	50-69	N27	D-	25	BNs's	
	83-92	S3	C	190	ANd	
	98-116	S23	D+	175	ASa	
	104-109	S22	D+	115	BSs	
	115-129	S40	C+	450	ANd*	Streamers
	152-157	S69	D	60	ANc	
	164-190	S86	D-	15	BNs's	
	193-194	S72	D-	30	ANa	
	199-200	S68	D-	15	BNs	
	222-232	S36	C	210	BSs,s	
	224-230	S38	D-	30	ASl	
	235-246	S25	D+	150	ASa	
	239-247	S22	D-	40	BSs,s	
	253-258	S9	D	90	BSs	
	256-267	S3	C+	350	ASf,f	
	267-269	N3	D	60	BSs	
	277-294	N24	C	180	ANd	
	298-311	N41	C+	350	ANc	Streamer
	324-328	N61	D-	15	BNs's	
	330-337	N68	D-	50	ANd	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
June 29	333-340	N70	C	270	ANd	
	58-63	N26	C-	160	BSs?	or ANm?
	69-79	N14	C	200	ANd	
	86-102	S7	C+	375	ANd*	
	98-101	S14	D	80	ASa	
	108-110	S23	D-	20	ASa	
	113-114	S27	D-	15	BSs	
	118-129	S39	C+	425	AS1	
	119-122	S34	D-	50	ANd	
	221-230	S40	C	275	ANd*	
	230-236	S33	D+	130	BSs	
	236-246	S24	D	100	ASa	
	240-252	S21	C	280	ANd*	
	254-270	S5	B+	950	ANd*	Streamers
	275-284	N14	D+	215	ASa	
	281-285	N17	D	45	BSs,s	
	292-298	N28	C	320	AS1	
	312-326	N51	C+	350	ANd	Arch
July 1	333-339	N68	C	250	ANd	
	339-13	N87	D-	30	BNs's	
	15-31	N64	C	275	ANd	Streamer
	31-54	N45	D-	40	BNs's	
	57-80	N20	A	1200	ANd*	Streamer
	80-84	N5	D	50	ASa	
	85-92	S1	C-	200	ANd	
	93-101	S10	D+	140	ANd*	
	98-111	S17	D	120	ASf?	or ASa?
	119-124	S34	D-	50	ANd	
	141-158	S60	D-	25	BNs's	
	161-164	S75	D	50	ANc	
	164-200	S86	D-	45	BNs's	
	201-206	S64	D	135	ANd	
	210-218	S54	D	110	ANd	
	220-231	S41	B-	425	ANd	
	241-248	S23	C	165	ANd	
	245-255	S16	C	235	ASa?	
	250-251	S16	D-	20	BSs	
	251-253	S15	D	50	BSp	
	254-264	S8	C-	200	ASa	
	254-270	S6	C-	170	ANd*	
	275-297	N21	C+	525	ANd*	
	293-298	N29	D	60	ASa	
	301-305	N36	D+	90	BSs	
	305-307	N39	D-	25	ASa	
	306-312	N42	D	90	ANd*	
	316-324	N53	D+	110	ANd	
July 9	348-349	N77	D-	5	BNs	
	28-33	N71	D	95	ANd	
	38-44	N49	D	95	ANc	Streamer
	62-68	N26	D	100	ANd	
(cont.)	74-81	N11	D	70	ANm	Streamer

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
July 9 (cont.)	92-102	S7	D-	50	ANd	
	106-114	S19	D	100	ASf,f	
	119-145	S45	A	1500	ANd	Flare, arch
	165-166	S75	D-	5	BNs	
	189-190	S81	D-	10	BNs	
	196-197	S75	D-	5	BNs	
	205-206	S65	D-	5	BNs	
	212-215	S57	D	45	ANc	
	227-236	S40	C	240	ANd*	
	231-235	S38	C-	120	BSs	Flare?
	237-254	S26	D+	150	ANd	
	254-258	S15	D-	35	ASa	
	258-260	S12	D	30	BSp	
	274-277	N4	D-	15	ANc	
	285-289	N16	D	60	ANd?	
	292-293	N21	D-	20	ANa	
	298-312	N34	C	250	ANd	
July 12	0-3	N86	D	50	ANc	
	16-19	N74	D-	30	ANd	
	27-39	N57	C+	400	ANd	
	43-47	N47	D	40	ANd	
	49-56	N38	D+	90	ANe	
	55-58	N36	D	40	ANd	
	64-73	N24	B	700	ANc	
	80-86	N9	D	35	BNs's	
	104-113	S16	C+	400	ANb	
	116-136	S33	C+	425	ANd	
	140-149	S53	C+	375	ANd	
	180-181	S86	D-	5	BNs	
	240-254	S23	C+	300	ANd	
	260-274	S3	C	275	ANd	
	277-280	N6	D	80	BSs?	or ASm?
	284-287	N14	D-	20	BSs	
	286-288	N15	D-	50	ASf	
	289-292	N19	D-	40	ASa	
	295-297	N24	D-	20	BSs	
	302-306	N32	D	70	BSs?	
	330-335	N61	D+	120	ANd	
July 15	340-348	N71	D+	150	ANe	
	345-10	N82	D-	35	BNs's	
	25-30	N66	D-	15	BNs's	
	31-42	N55	B-	450	ANd	Arching streamers
	42-71	N30	B	750	ANd*	
	68-76	N21	C	325	ASa	
	76-109	S1	B+	1150	ANd*	Streamers
	109-119	S18	C+	450	ANd*	
	120-127	S30	D-	75	ASa	
	120-123	S29	D-	20	BSs	
	129-135	S39	D	60	BSs,s?	
	135-148	S50	C	175	ANd	
(cont.)	160-161	S68	D-	20	ANb	

Date	Spread	Lat. of Center of Intensity°	Importance	Area in p.u.	Class	Comments
1957						
July 15 (cont.)	162-170	S74	D	65	BNs's	
	172-305	S85	D-	35	BNs's	
	207-239	S53	D-	45	BNs's	
	246-253	S24	D	60	ANd	
	270-278	N3	B-	600	ANd	
	283-286	N11	D	65	ANc	
	295-317	N34	B-	500	ANd	
July 16	332-8	N75	D-	35	BNs	
	35-44	N53	B-	450	ANd	
	59-69	N30	D	75	ANe	Streamer
	63-71	N27	D	60	ASa	
	64-81	N21	C	270	ANd*	
	93-106	S7	C	225	ANd	
	115-129	S29	C+	650	ASa	Fine example
	127-150	S44	C	270	ANd	
	165-206	S84	D-	25	BNs's	
	210-211	S64	D-	15	BNs	Poor seeing
	227-229	S46	D-	30	ANc?	" "
	261-267	S10	D-	60	ANe	" "
	266-268	S7	D-	15	?	" "
	277-279	N4	D	35	ANc	" "
	292-301	N23	C	265	ANd	
	314-320	N53	D+	125	ANd	
July 18	340-12	N79	D-	45	BNs's	
	346-351	N73	D	90	ANc	
	25-26	N69	D-	15	BNs	
	30-42	N57	B-	550	ANd	
	52-65	N37	C	240	ANd	
	70-85	N18	D	80	ANe	Streamer
	87-95	N5	D-	30	ASa	
	88-89	N6	D-	10	BSs	
	97-107	S6	D+	130	ANd	
	110-111	S16	D-	10	BNs	
	116-124	S25	C	160	ANd?	
	128-132	S36	D	55	ANd?	
	137-153	S51	D-	25	BNs's	
	154-156	S60	D-	20	ANm	
	169-207	S86	D	35	BNs's	
	208-223	S60	D-	30	BNs's	
	224-239	S47	C+	450	ANd*	Streamers
	239-240	S35	D-	25	ASa	
	240-245	S33	D	80	BSs	
	245-258	S25	C	270	ANd*	
	279-281	N5	D-	25	BSs?	or ANm?
	281-287	N8	D-	15	BNs's	
	292-303	N20	D-	30	BNs's	
	304-311	N31	C-	175	ANd*	
	312-313	N37	D	70	BSs?	
	316-326	N47	C	230	ANd*	
	330-340	N60	D-	25	BNs's	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
July 20	350-353	N76	D	50	ANc	Poor seeing all day or ANc? Omitted in the Analysis Streamer
	39-41	N56	D-	10	BNs	
	48-49	N48	D-	15	ANm?	
	63-79	N28	B	650	ANd	
	81-86	N12	D	90	ANd	
	90-100	N4	C-	225	ANd	
	125-126	S30	D	40	BSp?	
	131-139	S38	D	80	ANd	
	141-151	S71	B	500	ANc	
	159-162	S84	D-	50	ANm	
P.A. 180° to 360° missing						
July 21	340-29	N85	D-	35	BNs's	Streamers Streamer
	350-356	N76	D+	150	ANd	
	31-60	N50	D-	45	BNs's	
	63-71	N31	B-	450	ANd	
	71-100	N10	C+	550	ANd	
	116-143	S42	D-	55	BNs's	
	117-121	S23	D-	30	ANc	
	141-149	S51	B	600	ANc*	
	146-155	S53	D+	200	ASa	
	151-156	S57	D	65	BSs	
	161-164	S66	D	85	ANc	
	165-204	S84	D-	30	BNs's	
	204-235	S56	D-	30	BNs's	
	236-238	S39	D	25	ANb	
	239-250	S31	D	75	BSs's	
	247-254	S25	D	90	ASa	
	277-288	N8	D+	150	ANd	
	297-309	N26	D-	15	BNs's	
	314-330	N46	A-	1150	ANd	
	July 27	335-338	N59	D	50	
347-4		N74	C+	385	ANd	
17-22		N78	D-	40	BNs's	
25-35		N69	D-	20	BNs's	
40-44		N56	D	110	ANd	
46-54		N50	D-	30	BNs's	
68-72		N28	D	85	ANc	
72-85		N20	D-	50	ASa	
75-81		N21	C-	170	BSs's	
88-89		N10	D-	15	BSs	
90-93		N7	D-	20	ASa	
93-123		S18	A-	1350	ANd*	
128-137		S34	C-	170	ANd	
153-205		S79	D	70	BNs's	
176-185		S78	D	85	ANd	
206-213		S69	D	95	ANd	
214-225		S60	D-	35	BNs's	
228-242		S43	D+	120	ANd	
245-251		S29	C+	190	ANd	
(cont.)		268-295	0	B	700	ASa? or AS1?

Date	Spread	Lat. of Center of Intensity°	Importance	Area in p.u.	Class	Comments
1957						
July 27 (cont.)	277-295	N8	C	275	BSa	
	304-305	N27	D	25	BSa	
	306-311	N31	C+	240	AS1	
	316-321	N40	D-	40	ANd	
	324-331	N50	C	180	ANc	
Aug. 10	342-18	N75	D-	20	BNs's	
	25-41	N71	D-	25	BNs's	
	43-45	N60	D	90	ANc	
	48-63	N49	B-	450	ANd	
	68-79	N32	D	110	ANd	
	85-98	N16	C	315	ASa	
	100-106	N2	D+	140	ANc	
	111-128	S18	C-	200	ANd	
	128-138	S29	C	225	ANd*	
	133-140	S33	D+	165	ASa	
	138-143	S38	D	70	BSa	
	148-152	S45	D-	30	ANc	
	156-158	S53	D-	15	ANm	
	164-168	S61	D-	10	BNs,s	
	177-184	S76	D+	140	ANm	
	187-188	S81	D-	5	BNs	
	191-200	S84	D	90	ANd	
	207-231	S67	C+	325	ANd	
	260-262	S23	D-	20	BSa	
	270-285	S8	C+	450	ANd	
	291-297	N9	D+	100	ANd	
	310-312	N27	D-	25	ASa	
	316-319	N34	D	55	BSa?	
	325-331	N45	D+	150	ANd*	
	329-334	N47	C-	190	BSs?	or ANb?
Aug. 11	347-349	N64	D	20	ANc	
	357-1	N74	D-	10	BNs,s	
	19-47	N70	D-	35	BNs's	
	54-61	N48	C-	150	ANd	
	65-69	N37	D-	60	ANc?	
	71-73	N32	D	35	ANc	
	103-106	O	D	65	ANd	
	126-139	S27	D	100	ASa	
	129-135	S28	D	60	ANd*	
	138-145	S38	C	175	BSs	
	141-142	S37	D	30	BSp	
	160-167	S59	D+	140	ANd	
	179-189	S77	C-	160	ANm	Streamer
	215-231	S63	C+	300	ANd	
	271-280	S9	D-	10	BNs's	
	273-276	S9	D-	50	ANa	
	293-295	N10	D-	15	BNs	
	299-303	N17	D	75	BSa	
	306-312	N26	D-	35	ANd	
	312-321	N32	C-	180	BSa	
	313-321	N33	C-	240	ASa	
	322-325	N40	D	70	ANd*	
	331-336	N50	D+	125	ANd	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
Aug. 12	335-28	N74	D	120	BNs's	
	29-41	N70	D-	25	BNs's	
	42-45	N61	D+	100	ANc	
	53-60	N49	D	55	ANd	
	69-81	N31	D	110	ANd	
	77-80	N27	D-	40	ANa	
	77-83	N24	D+	145	ANc	
	89-102	N9	C	280	ANd	
	106-117	S7	D-	35	BNs's	
	128-131	S25	D-	30	ASa	
	130-132	S26	D-	20	BSs	
	130-142	S31	C+	335	AS1	
	141-143	S37	D-	40	BSs	
	143-146	S39	D-	40	ASa	
	154-168	S57	B-	400	ANd	Streamers
	179-205	S81	D-	55	BNs's	
	181-183	S76	D	65	ANm	
	196-198	S83	D-	40	?	
	210-216	S70	D-	25	BNs's	
	217-235	S61	B-	700	ANd	Streamer
	238-249	S42	D-	60	BNs's	
	253-261	S29	D	65	ANd	
	266-286	S9	D-	30	BNs's	
	293-312	N17	C+	350	ANd	
	314-320	N32	D	85	BSs	
	317-324	N34	D	60	ASa	
	328-333	N46	D	50	ANd	
Aug. 13	333-27	N74	D-	75	BNs's	
	31-67	N58	D-	70	BNs's	
	39-42	N64	D	100	ANe	
	66-82	N31	B-	400	ANd*	
	82-91	N18	D+	130	ASa	
	83-90	N18	D+	125	AS1	
	93-114	S1	C+	315	ANd	
	124-135	S25	C	220	ANd*	
	131-144	S33	D+	260	ASa	
	134-137	S31	D	70	ASf	
	146-153	S45	D-	60	ANd	
	155-171	S58	B-	550	ANd	
	182-189	S77	D	90	ANc	Streamer
	195-204	S82	D-	35	BNs's	
	218-234	S60	C+	375	ANd	Streamer
	236-250	S43	D-	35	BNs's	
	252-255	S32	D-	40	ANc	
	263-289	S8	D	55	BNs's	
	293-311	N18	C+	450	ANd	
Aug. 14	43-53	N56	D+	190	ANd	Streamer
	69-72	N35	D-	45	BSs	
	70-86	N26	C-	180	AS1	
	82-89	N19	D	65	BSs	
(cont.)	85-100	N10	C	260	ASa	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
Aug. 14 (cont.)	103-104	N1	D-	15	ANe	
	105-107	S1	D	20	BSs	
	116-120	S13	D	50	ANd	
	128-140	S29	C	250	ANd	
	144-147	S41	D-	15	BNs,s	
	152-176	S55	B+	1050	ANd	Streamers
	175-178	S72	D-	15	BNs's	
	186-191	S80	D	50	ANd	
	197-208	S79	D-	30	BNs's	
	217-248	S50	D-	35	BNs's	
	252-258	S31	D	120	ANd	
	268-290	S6	D-	25	BNs's	
	280-282	S4	D	60	BSa?	or ANa?
	289-309	N10	C	290	ANd	
	311-317	N28	D-	20	BNs's	
	318-328	N36	D+	115	ANd	
	332-340	N51	D-	25	BNs's	
Aug. 15	45-48	N60	D+	100	ANd?	
	49-58	N52	D-	10	BNs,s	
	78-87	N24	D-	40	ASa	
	84-94	N15	D+	140	ANd*	
	90-94	N14	D	70	ASa	
	99-104	N4	D	60	ANc	Streamer
	122-123	S17	D-	15	BNs	
	129-143	S28	C	250	ANd	Streamer
	148-164	S53	B	750	ANd	
	208-222	S79	D-	15	BNs's	
	260-278	S19	B	850	ANd	Arching streamers
	280-299	N4	B	250	ANd	
	299-307	N18	D	85	ANd	
	324-325	N38	D-	25	BNs?	
Aug. 16	337-28	N74	D	105	BNs's	
	32-70	N60	D	75	BNs's	
	46-49	N59	D+	135	ANc	
	60-64	N44	D	90	ANe	
	70-90	N25	D+	150	ANd*	
	79-88	N24	D	120	ANe	
	88-94	N15	D-	40	ASa	
	95-105	N7	C	200	ANd*	
	106-116	S4	D-	25	BNs's	
	148-155	S44	D+	130	ANb	
	157-166	S56	B	475	ANd	Ascending
	169-204	S68	D-	25	BNs's	
	208-211	S72	D+	110	ANc?	
	217-235	S61	D-	35	BNs's	
	249-266	S33	D+	160	ANd	
	272-273	S14	D-	15	ANc	
	275-300	N2	C+	450	ANd	
	302-308	N20	D-	15	BNs's	
	326-328	N31	D-	20	ANm	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
Aug. 20	330-342	N49	C	250	ANd	
	348-29	N79	D+	125	BNs's	
	36-44	N68	D-	25	BNs's	
	52-62	N50	D	100	ANd	
	86-87	N21	D-	10	BNs	
	97-104	N8	D+	140	ANd	
	109-115	S3	D-	30	BNs's	
	122-128	S18	D-	40	ASa	
	130-132	S23	D	35	BSs	
	135-150	S36	C	250	ANd	
	152-160	S48	D	40	ANd	
	164-175	S61	C+	385	ANc	
	182-187	S83	D	80	ANm	
	190-205	S83	D-	60	BNs's	
	210-216	S74	D-	25	BNs's	
	217-225	S68	D+	120	ANd	
	236-242	S49	D-	25	BNs's	
	245-264	S34	B-	650	ANd	Streamers
	264-268	S22	D	65	ANd	
	268-272	S18	D+	90	ANm?	
	273-276	S14	D	50	ASa	
	289-292	S8	D+	140	BSs?	
	301-303	N14	D-	30	ASa	
	303-305	N16	D	40	BSs	
	305-318	N23	C+	375	ANd*	
	320-325	N35	D	50	ANd	
Aug. 22	335-340	N50	D-	20	BNs's	
	2-5	N74	D	60	ANc	
	6-26	N83	D-	50	BNs's	
	64-68	N32	D-	15	BNs's	
	72-86	N30	C	260	ANd	Streamer
	82-93	N22	D	100	ANd	
	91-105	N8	C+	315	ANd	Streamers
	111-116	S5	D	105	ANd	
	122-126	S16	D	65	ASa	
	125-127	S18	D+	120	ASf	
	127-138	S22	B-	475	ANb*	Streamers
	139-145	S34	D+	165	ASa	
	145-154	S41	D+	130	ANd*	
	155-162	S50	D-	25	BNs's	
	162-165	S55	D-	15	BNs's	
	166-176	S65	C	260	ANb	Streamer
	178-183	S71	D-	10	BNs,s	
	185-192	S78	C-	180	ANd	Arching streamer
	193-204	S83	D-	35	BNs's	
	205-237	S68	D-	65	BNs's	
	245-262	S33	B	550	ANd	
	260-267	S25	D-	25	BNs's	
	267-295	S12	B-	400	ANd	
	300-301	N12	D-	10	BSs	
	304-307	N17	D+	120	BSs	
	307-317	N23	C	235	ANd	
	319-334	N38	D-	20	BNs's	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
Aug. 23	336-344	N52	D	80	ANc	Streamer
	340-358	N59	D-	30	BNs's	
	3-10	N77	D*	140	ANd	
	11-26	N83	D-	35	BNs's	Streamers
	27-71	N62	D	75	BNs's	
	77-94	N24	C	285	ANd	
	95-96	N14	D-	15	BSs	
	100-103	N8	D-	20	BSs*	
	108-110	O	D-	15	ANm	
	114-118	S7	D	100	ANd	
	121-135	S20	B+	850	ANd*	
	135-145	S32	C+	350	ASa	
	150-151	S41	D-	15	BSs	
	156-161	S49	D-	15	BNs's	Streamers
	166-178	S66	C+	450	ANc	
	192-194	S81	D-	35	ANb	
	195-208	S83	D-	20	BNs's	
	210-240	S64	D-	40	BNs's	
	246-260	S37	C	270	ANd	Streamer
	269-276	S17	C-	165	ANd	
	282-303	N6	B-	450	ANd	
	307-314	N20	D*	115	ANd	
	319-335	N32	D-	25	BNs's	
Aug. 24	333-358	N56	D-	30	BNs's	
	3-11	N77	D	100	ANd	
	13-25	N83	D-	30	BNs's	
	26-68	N64	D	85	BNs's	
	70-82	N35	D*	160	ANd*	
	84-106	N19	C-	275	ASa	
	86-101	N19	C	250	BSs's	
	111-116	S4	D-	60	ANd	
	119-122	S12	D-	50	ASf	
	128-135	S21	D*	150	ANd*	
	135-149	S34	D-	40	ANd*	
	139-151	S36	D	110	ASa	
	166-200	S70	C+	375	ANd	
	204-205	S81	D-	10	BNs	
	216-222	S70	D-	30	BNs's	
	223-226	S65	D	60	ANb	
	230-247	S51	D-	35	BNs's	
	249-256	S47	D-	60	ANd	
	272-274	S16	D-	15	BSs	
	276-308	N6	B-	550	ANd	
	313-315	N25	D	40	BSp	
	321-332	N37	D	125	ANd	
Aug. 25	336-345	N51	D-	30	BNs's	
	349-351	N61	D	50	ANc	
	357-4	N71	D-	20	BNs's	
	52-53	N56	D-	5	BNs	
	70-91	N32	C+	325	ANd	
(cont.)	93-103	N12	D*	170	BSs	

Date	Spread	Lat. of Center of Intensity	Impor- tance	Area in p.u.	Class	Comments
1957						
Aug. 25 (cont.)	135-142	S28	D	80	ANd?	
	151-152	S43	D-	20	BSs?	
	170-182	S64	D-	25	BNs, s	
	186-190	S77	D	60	ANc	
	198-199	S83	D-	10	BNs	
	209-210	S77	D-	25	ANa	
	232-256	S43	B	500	ANd*	
	248-251	S40	D+	160	BSs	
	267-282	S16	C-	185	BSs's	
	279-282	S9	D-	35	ASa	
	295-299	N6	D-	30	ANd	
	306-318	N22	D-	25	BNs's	
	321-332	N36	C	195	ANd	
Aug. 26	342-358	N59	C	270	ANd	Streamers
	3-7	N75	D+	120	ANc	
	42-44	N66	D-	10	ANm	
	72-94	N31	C*	375	ANd	
	99-104	N7	D-	50	ASa	
	105-108	N3	D	70	ANb*	
	110-112	S2	D-	15	ANc	
	138-145	S32	C-	160	ANd	
	172-173	S63	D-	10	ANm	
	182-190	S76	D	140	ANd	
	237-253	S46	B	600	ANc	Streamer
	270-280	S13	D-	190	ANd*	
	280-283	S8	D	75	BSs	
	295-312	N13	C*	350	ANd	
	314-315	N25	D-	20	BSs	
	316-323	N30	D-	35	ASa	
	326-335	N40	D	80	ANd	
Sept. 9	321-347	N47	B*	950	ANd*	
	36-43	N72	C	275	ANc	
	46-48	N66	D-	25	ANc	
	53-56	N59	D	45	ANd	
	62-63	N51	D-	10	BNs?	
	73-77	N38	D	45	ANd	
	92-103	N17	D	70	ANd	
	109-116	N1	D*	140	ANd	
	129-136	S19	D*	120	ANd	
	140-142	S28	D	55	BSs	
	144-148	S33	D*	80	BSs?	
	158-160	S46	D-	20	ANm?	or BSs?
	165-170	S55	D	55	ANa?	
	185-196	S66	D	20	BNs's	
	205-222	S78	D-	30	BNs's	
	246-247	S47	D-	5	BNs	
	260-275	S22	B-	425	ANd	
	304-315	N26	D*	110	ANd*	
	306-320	N22	D	190	ASa	

Date	Spread	Lat. of Center of Intensity°	Impor- tance	Area in p.u.	Class	Comments
1957						
Sept. 10	319-347	N42	B+	1200	ANd	Poor seeing all day
	40-46	N69	C-	160	ANc	
	78-82	N33	D-	20	ANd	
	94-96	N18	D-	20	ANd	
	100-106	N10	D	80	BSs	
	134-143	S24	C	200	ANd	
	152-153	S40	D-	15	BNs	
	159-192	S57	D-	35	BNs's	
	262-274	S23	C	240	ANd	
	282-283	S11	D-	10	BNs	
	290-292	S2	D	40	ANm	
	299-316	N16	D+	170	ANd	
Sept. 11	336-352	N52	B	750	ANd	Streamer or ANm?
	353-26	N78	D	70	BNs's	
	41-47	N68	C+	350	ANd	
	60-72	N47	D-	15	BNs's	
	81-87	N30	D+	120	ANd*	
	84-100	N22	D	100	ASa	
	89-96	N20	D	100	ANd*	
	138-149	S29	C-	200	ANd	
	150-159	S42	C	190	ANc	
	164-169	S53	D+	110	ANc?	
	175-180	S64	D-	15	BNs's	
	188-201	S76	D	120	ANd	
	228-232	S62	D	65	ANd	
	257-266	S31	C-	170	ANd	
	267-273	S23	D-	50	BSs	
	280-287	S8	D-	60	ANc?	
	292-296	N1	D-	10	BNs's	
	308-316	N19	D	60	ANd	
	320-334	N33	C+	325	ANd	
Sept. 26	345-356	N54	D-	35	BNs's	Streamer
	357-19	N72	A	1850	ANd	
	73-83	N36	C+	375	ANd	
	85-121	N13	B-	850	ANd	
	139-141	S24	D	50	BSp?	
	141-149	S27	C	190	ANd	
	151-155	S37	C-	175	ASf	
	155-160	S41	C	230	ANm*	
	163-197	S63	D-	45	BNs's	
	198-201	S83	D	80	ANd	
	206-221	S80	D-	45	BNs's	
	223-229	S71	D	100	ANd	
	231-245	S58	D-	40	BNs's	
	245-272	S41	A+	2600	ANd*	
	269-283	S19	D-	40	BSs's	
	272-282	S19	D+	100	ASA	
	290-297	S2	D-	10	BNs's	
	300-307	N5	B-	550	ANb*	Streamer
	307-315	N14	C+	300	BSs	
	319-328	N17	C+	350	ASa	
	330-345	N41	C	235	ANd	

Date	Spread	Lat. of Center of Intensity°	Importance	Area in p.u.	Class	Comments
1957						
Sept. 28	341-350	N50	D+	140	ANd	
	0-15	N71	A-	1400	ANd	
	22-55	N79	D-	25	BNs's	
	70-77	N43	D-	30	BNs's?	
	83-90	N30	D	80	BSs	
	85-88	N29	D-	60	ASa	
	92-98	N21	D	100	ANd*	
	104-114	N7	D-	15	BNs's	
	106-108	N9	D-	20	ANa	
	117-124	S3	C+	200	BSs?	or ASm?
	129-131	S14	D	40	BSs	
	138-139	S23	D-	15	BSs	
	143-149	S29	D	90	ANd	
	155-157	S40	D-	40	ANd	
	160-164	S46	D+	110	BSs?	or ANb?
	174-206	S68	D-	55	BNs's	
	203-211	S83	D	110	ANd	
	220-232	S69	C	235	ANd	
	243-244	S53	D-	10	BNs	
	251-260	S41	D	80	ANd	
	266-280	S23	D-	20	BNs's	
	305-310	N12	D	75	ASa	
	310-312	N15	D-	25	AS1	
	311-314	N17	D-	40	BSs	
	318-335	N28	C+	390	ANd	
Sept. 29	336-351	N48	B-	500	ANd	
	354-8	N62	D-	20	BNs's	
	8-18	N76	B+	650	ANd	
	19-69	N71	D-	55	BNs's	
	70-77	N42	D-	60	BNs's	
	78-89	N32	C	250	ANd	Arching streamers
	96-98	N19	D-	45	BSs	
	98-104	N14	D-	65	ASa	
	115-123	S3	D+	120	ANd	
	129-137	S17	C	280	BSs's	
	137-149	S25	C+	350	ANd*	Arching streamer
	148-153	S34	C-	150	BSs	Surge flare along hedgerow
	153-161	S39	C+	300	ANd*	
	162-167	S48	D	80	ANd	
	169-187	S60	D	50	BNs's	
	190-195	S74	D	60	ANd	
	199-220	S82	D-	55	BNs's	
	222-239	S66	C	230	ANd	
	249-258	S51	D	90	ANd	
	259-260	S37	D-	15	BSs	
	261-268	S32	D-	50	?	
	272-276	S23	D-	40	ASa	
	275-280	S19	D-	30	BSs	
	290-307	S2	C-	190	ANd	Streamer
	308-318	N17	D	40	BSs	
	320-337	N33	B	600	ANd	Arches

TABLE II
SACRAMENTO PEAK PROMINENCE FILMS

Date	P.A.	Class	Comments
1957			
Jan. 22	234 ^o	ANd	Arch
Feb. 9	69	ASf	Fine example of funnel
11	63	ASa, BSs, ASf, ANc*	
13	55	ANd, ASf, BSs, ASl, ANd*	Surge evolves into loops
24	264	ASa, BSs, ANd, ANc	
26	221	ANd, ASa	Streamers; arch
Mar. 17	235	BSs?, ASa, ANd*	Surge or tree trunk?
Apr. 8	95	ANd*, BSs, ANd*	Streamers
10	105	BSs's, ASa, ANd*	Arch
13	268	ASa, BSs	Flare in surge which rises as an arch and then evolves into loops
16	36	ANm, BSs, ASl, BSs	
18	27	ANm, BSs's	
	90	ASa	
24	110	ANd	Loop-shaped streamers
26	250	BSs, ANc	Streamer
May 4	95	ASa, BSs, ANc*, BSs	
	235	BSs, ASl, ASf, ANd	Small flare in brilliant spot above chromosphere becomes double and spreads downward along one side of a loop
	237	BSs, ASl, ASf, ANd	
	310	ANd, ANd	One hedgerow ascends
9	227	BSs, ASa	Flare in surge
	245	ASf, BSs, ANd*	Arch in hedgerow. Flare in surge moving across hedgerow
May 15	222	BSs, ASl, a	Flare in surge which evolves into loops
	233	ANd, ASl, ANd	
17	216	BSs's, ASa, l	Flare in slowly changing dome-shaped surge
	240	ANd*, ASa, BSs, ASa	
18	268	ASa, BSs, p, ANd*	
19	80	ASf, BSs	Flare in dome-shaped surge
	92	BSs, ASa	Flare in loop-shaped surge
26	102	ANa?, d, BSs, ANd*	ANa? or ASa?
30	240	ASf	Loop-shaped streamers
31	285	ANd, ASa, l, BSs	Flares in small dome-shaped surges and in a knot of a loop. The loops become low

TABLE II (CONT.)

Date	P.A.	Class	Comments
1957			
June 6	45°	ASl, BSs, ASa	
10	236	ASl, f, BSs's	
13	45	ANd	Streamers
14	65	ANd, BSs, ASl	
	235	BSs's, ASl, a	Loop-shaped surge
15	210	ASl, BSs, p	
17	36	BSs, ANd*, ASf, BSs, p	
		ANd*, BSs	Loop-shaped streamers
20	230	ANm, BSs	
21	314	BSs, ASa, ANd*	Hedgerow ascends
23	300	ASl, BSs?, ANd*, ASa	BSs? or ANm?
25	122	ASa, ASl, BSs, ANc*	Flare in horizontally moving surges. Surge evolves into loops
28	120	ASa, ASl, BSs	Magnificent loops
29	120	BSs, ASa, ANd*, ASl, BSs's	
July 1	250	ANd*, ASa, BSs, ANd	
21	320	ANd	
27	290	ASa, BSs	
Sept. 26	315	ANd*, ASf, ANd	Circular streaming in hedgerow
27	262	ANd*, BSs	Streamers from hedgerow to surge area. Hedgerow ascends
28	133	ANd	

COMPARISON OF CLASSES FROM SURVEYS AND FILMS

Motion picture films of prominences were made on 41 days at the Sacramento Peak Observatory during 1957. For 32 of these days corresponding surveys were also made. Of the 127 prominences classified in the films and surveys at the same position angle and same date, 106 appeared in both media.

Table III shows the classifications given to the prominences in both surveys and films. Of the 106 common to both kinds of observation, 86 or 81 per cent were classified identically; 17 or 16 per cent were typed as belonging to closely related classes; and 3 or 3 per cent otherwise.

TABLE III

COMPARISON OF CLASSIFICATIONS FROM FILMS AND SURVEYS

PROMINENCE TYPES SEEN IN SACRAMENTO PEAK FILMS - 1957

	ASa	ASl	ASf	BSs	BSp	ANa	ANb	ANc	ANd	ANe	ANm	BNs	Unclassified	Missing
PROMINENCES TYPES SEEN IN SACRAMENTO PEAK SURVEYS - 1957														
ASa	20	4	2											2
ASl	1	4	2											1
ASf			6											
BSs		1	28											2
BSp														1
ANa														
ANb									1					
ANc			1					1	1					
ANd	1							3	26			1		
ANe														
ANm			1						1			1		
BNs														2
Unclassified														
Missing	1	2		5	3	1						1		

ANALYSIS

In Table IV are tabulated the average number of prominence units per day for the various prominence classes and for each 10° of solar latitude. Since surveys were made on only six days during the last four months of the year, the average values for this period must be considered to be of low weight.

Table V lists the average number of prominence units at all latitudes for types A and B, S and N, those unclassified, and for all together, for each third of the year. Here again the values for the last third of the year must be considered to be of low weight. The totals show that in 1957 there was a larger area of prominences than in 1956.

Of the 1957 prominences less than one per cent were unclassified; 89.5 per cent were assigned to A-type classes in which the prominence material moves downwards toward the chromosphere; and 19 per cent were associated with sunspots.

Prominences denoted with an asterisk in Table I are those which show interaction with prominences of the S-types. When these are summed we find that 53 per cent of the tree trunks (ANb), 19 per cent of the trees (ANc), 10 per cent of the mounds (ANm), and 29 per cent of the hedgerows showed such activity.

TABLE IVa
AVERAGE NUMBER OF PROMINENCE UNITS PER DAY

Northern Latitudes										All N.
Class	90-80	79-70	69-60	59-50	49-40	39-30	29-20	19-10	9-0	Latitudes
1957										
January - April 37 days' observations										
ASa				19.7	4.0	6.2	23.1	16.8	6.6	76.4
ASl						5.8	4.9	29.2	2.4	42.3
ASf						12.2	5.7	90.2	43.5	151.6
BSs					4.5	10.0	14.2	26.3	14.7	69.7
BSp										----
ANa				0.5				1.1	3.0	4.6
ANb									5.8	5.8
ANc		1.5	2.3	42.8	0.8	7.8	0.8	13.4	20.3	89.7
ANd	5.4	4.7	125.3	115.6	122.7	171.5	85.4	144.4	183.1	958.1
ANe					0.4	7.6		11.5	7.3	26.8
ANm			7.5	25.5	12.4	4.1	4.5	1.1	6.8	61.9
BNs	8.2	11.2	5.0	3.1	4.1	2.6	3.1	3.8	1.2	42.3
Unclassed								0.5		0.5
All	13.6	17.4	140.1	207.2	148.9	227.8	141.7	338.3	294.7	1529.7
May - August 59 days' observations										
ASa					2.7	15.0	30.8	41.5	33.4	123.4
ASl						4.1	9.4	2.5	2.5	18.5
ASf					2.2	1.2		6.6	7.7	17.7
BSs				1.9	6.2	41.3	12.6	31.4	13.7	107.1
BSp						0.3	0.7			1.0
ANa							1.0			1.0
ANb			2.5		8.4	4.6			1.2	16.7
ANc	2.5	7.5	14.3	8.8	11.4	4.1	17.1	5.9	10.3	81.9
ANd	2.6	39.2	35.9	183.0	90.8	188.8	154.4	161.6	185.0	1041.3
ANe		2.5	1.7		1.5	3.0	3.5	2.0	0.2	14.4
ANm	0.8	7.5	6.5	8.2	4.0	3.6	2.9	2.5	0.9	33.9
BNs	11.8	18.1	10.3	7.4	3.7	3.1	4.5	1.3	1.4	61.6
Unclassed						0.4			0.4	0.8
All	17.7	74.8	71.2	209.3	130.9	269.5	236.9	255.3	256.7	1522.3
September - December 6 days' observations										
ASa							58.3	81.7		140.0
ASl								4.2		4.2
ASf										----
BSs						13.3		84.2		97.5
BSp										
ANa									3.3	3.3
ANb									91.7	91.7
ANc		45.8	30.8							76.6
ANd		650.0	58.3	155.8	480.8	289.2	116.7	195.0	23.3	1969.1
ANe										----
ANm									6.7	6.7
BNs		25.0	3.3	7.5	17.5				4.2	57.5
Unclassed										----
All		720.8	92.4	163.3	498.3	302.5	175.0	365.1	129.2	2446.6

TABLE IVb

AVERAGE NUMBER OF PROMINENCES UNITS PER DAY

Southern Latitudes										All S. Latitudes
Class	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	
1957										
January - April 37 days: observations										
ASa	4.3	50.8	48.6	4.3	4.3	5.1				117.4
ASl	20.5	19.8	19.3	10.9						70.5
ASf	25.1	78.3	13.4	1.6	15.3	0.7				134.4
BSa	5.0	41.3	41.0	6.5	8.5	1.4				103.7
BSp			0.5							0.5
ANa					0.4					0.4
ANb		10.8		10.0					0.8	21.6
ANc	35.3		2.7	3.5	4.1	10.3	5.1	7.6	1.1	69.7
ANd	154.1	95.2	223.0	177.2	103.3	68.3	105.2	3.5		929.8
ANe		7.3								7.3
ANm	2.2	2.7	1.8	4.7	7.3	1.5	1.4	1.4		23.0
BNs	3.2	3.0	1.5	3.0	1.2	6.0	4.2	13.4	1.8	37.3
Unclassed					0.9					0.9
All	249.7	309.2	351.3	221.7	145.3	93.3	115.9	25.9	3.7	1516.5
May - August 59 days: observations										
ASa	22.7	39.8	50.8	22.0	1.2	7.3				143.8
ASl	9.5	14.4	25.7	13.4						63.0
ASf	8.3	11.7	0.5	3.1	6.3	1.7				31.6
BSa	21.1	23.8	38.0	33.9	7.9	1.1				125.8
BSp		1.4	0.4	0.5						2.3
ANa	0.8				0.3		3.1	0.9	0.3	5.4
ANb		6.8	8.1	2.5	5.6		5.8		0.6	29.4
ANc	5.9	1.7		5.9	13.9	12.3	12.2	12.0		63.9
ANd	111.4	118.5	119.2	168.5	120.6	113.7	62.2	14.7	1.5	830.3
ANe	1.0	0.4	0.5	4.9	5.1					11.9
ANm	0.3	5.6	2.0	1.9	7.0	2.0	5.8	9.4	1.4	35.4
BNs	4.2	2.3	3.3	2.3	5.4	8.0	11.0	9.7	14.2	60.4
Unclassed	0.8		0.8					1.1		2.7
All	186.0	226.4	249.3	258.9	173.3	146.1	100.1	47.8	18.0	1405.9
September - December 6 days: observations										
ASa		16.7	6.7							23.4
ASl										----
ASf					29.2					29.2
BSa	33.3	65.0	20.0	40.8	18.3					177.4
BSp			8.3							8.3
ANa						9.2				9.2
ANb										----
ANc	10.0				31.7	18.3				60.0
ANd	51.7	20.0	282.5	85.0	460.0	15.0	88.3	46.7	31.7	1080.9
ANe										----
ANm					41.7					41.7
BNs	1.7	1.7	3.3	2.5	6.7	16.7	22.5	12.5	9.2	76.8
Unclassed				8.3						8.3
All	96.7	103.4	320.8	136.6	587.6	59.2	110.8	59.2	40.9	1515.2

TABLE V

SUMMARY FOR 1957

Average Number of Prominence Units per day at all Latitudes

Type	Jan. - Apr.	May - Aug.	Sept. - Dec.
A	2791.3	2566.5	3536.0:
B	253.5	358.2	417.5;
S	766.5	634.2	480.0:
N	2278.3	2290.5	3473.5:
Unclassed	1.4	3.5	8.3:
All	3046.2	2928.2	3961.8:

: low weight